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THE
GARDENERS' MONTHLY
AND
HORTICULTURIST.

DEVOTED TO
HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

EDITED BY

THOMAS MEEHAN,

STATE BOTANIST OF PENNSYLVANIA,

FORMERLY HEAD GARDENER TO CALEB COPE, ESQ., AT SPRINGBROOK, AND AT THE BARTRAM BOTANIC
GARDENS, NEAR PHILADELPHIA. GRADUATE OF THE ROYAL BOTANIC GARDENS, KEW
(LONDON), ENGLAND. MEMBER OF THE ACADEMY OF NATURAL SCIENCES.
AUTHOR OF "AMERICAN HAND-BOOK OF ORNAMENTAL TREES,"
"FLOWERS AND FERNS OF THE U. S.," ETC.

VOLUME XXVIII, 1886.

PHILADELPHIA:

CHAS. H. MAROT, PUBLISHER,

No. 814 CHESTNUT STREET.

1886.

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CHAPEL

v. 28

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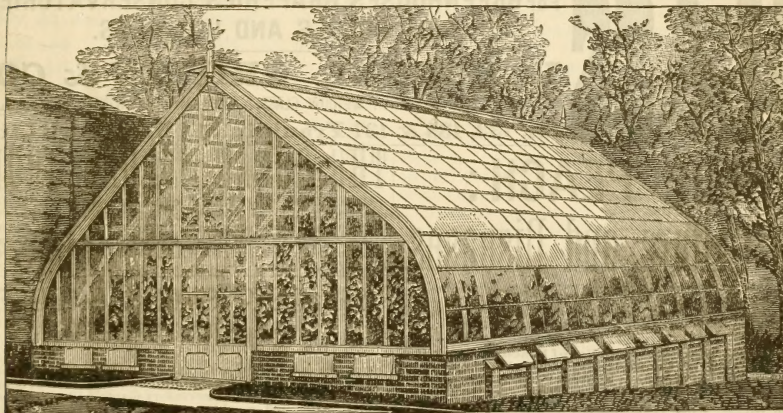


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Edited by THOMAS MEEHAN.

VOLUME XXVIII.

JANUARY, 1886.

NUMBER 325.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

A correspondent calls our attention to an article in the *Garden* of London, to some capital hints on planting trees and shrubs. They are so exactly in accord with our own teachings, and so timely, that we cannot do better than adopt them here as our "Seasonable Hints" for January:

"The dotting style of planting trees is cold as well as meager; nevertheless it has its uses; it shows what individual plants can become under difficulties. It also brings individual specimens and species into the sharpest contrast. It has also enabled cultivators to grow the largest number of species and varieties within a given area. Useful as a school in which something may be learned about trees, it is worse than useless as a means of improving landscape effects; nay, more, the dotting plan mars every landscape on which it is practiced. What play of light, or shadow, or repose, could be obtained by a series of dots, even though they consisted of trees faultless in form and symmetry? Trees so disposed might be enjoyed as specimens, but a pleasing landscape consisting of solitary trees is plainly an impossibility. Not only, however, is the dotting style inimical to landscape beauty, but it is also opposed to cultural perfection.

"Trees and shrubs are gregarious by nature, and if we compel them to grow in solitary isolation, we must take the consequences; and we do so in the form of slow and stunted growth in summer, or of ruthless destruction by cold in winter. It is not good for trees to grow alone. Each wind that blows beats against them with full force;

the sun and dry air drain each leaf and bough of its rich juices, and, worse than all, the extremes of heat and cold do their worst as regards the exposed roots. This exposure of the roots to direct solar and atmospheric influence is altogether unnatural, and consequently injurious. But there is no need to rest the case on such general statements. It is only necessary to trace the palpable effects of the frost throughout our pleasure grounds, after an exceptionally hard winter, to discover that the single trees are often cut down, while groups of the self-same sorts escape unhurt. The seeming exceptions but confirm the rule.

"These exceptional groups killed or injured will be found in a lower situation or a moister locality. In the former the air is colder, as cold air will shoot down valleys into plains with as much certainty as a stone will roll down a hill; in the latter the plants are also more tender. Excessive moisture may help growth, but it hinders maturity, and it is maturity that enables plants to withstand cold. Hence it follows that groups may in such exceptional localities be cut down, while single trees at a higher level, if more thoroughly matured, may escape. But let the threefold conditions of soil, site, and maturity be alike, and the results will be wholly in favor of the groups. It is necessary, however, to bear in mind that there are 'groups and groups.' It is not only possible, but easy, to render groups tender by overcrowding or over-feeding, and when such is the case, groups may be swept away by a frost that will hardly brown the leaves of a solitary tree. It may be well to add that excessive stimulation, from whatever cause, results in weakness, that leaves the plants more liable to injury from cold than more hardy treatment.

"The object, however, is to show that, the conditions of growth being the same, Conifers planted in groups endure winters better than those dotted about singly. There is more than one reason for this; the tops are warmer and so are the roots. Planters can scarcely realize the amount of shelter that plants afford each other when planted in groups. Most plants are crippled or killed from the roots upwards, and not from the tops downwards. This is what kills isolated trees. The best roots are often considerably beyond range of the tops. Of course, the feeding roots sweep out, and are, in ever-widening areas, in search of new and better food. Just then the frost comes down upon them with full power, and either paralyzes, or kills them. Old roots might be frost-proof, but young ones are not. The former deprived of the latter are as useless as detached gas or water pipes cut off from the mains. The collecting roots being crippled or killed, the main ones become useless, and the tree begins to languish and die, or, in other words, is starved by the amount of cold at its most sensitive extremities, which planting in groups would have protected most effectually. There is another powerful inducement to planting in groups.

"The dead leaves may be left to protect the roots along with the overshadowing tops. The former, in many cases, would afford the better protection. It is astonishing how many leaves fall off *Coniferae* just before winter; whole barrowloads of withered leaves lie under large trees of *Pinus excelsa*, *P. Sabiniana*, *P. macrocarpa*, and others. Under single trees these are, in most cases, carefully swept or raked up, as so much unsightly litter, or are blown away by the wind. This is simply to lay the most sensitive part of the tree open to the cold. In a state of nature these dead leaves accumulate to such an extent as to cover the ground under the trees ankle deep. They decompose very slowly, and their texture, form, and non-conducting powers are such that a very thin layer of them forms a frost-proof barrier. I have proved this, and no one who has not noted the power of the tops above and leaves below to resist cold could form a proper estimate of their potency. In group planting there is no temptation to remove the dead leaves, and the wind is powerless to drive them out. Hence trees in groups cannot suffer at the roots, and, as a rule, they winter safely."

COMMUNICATIONS.

CROCKING OR DRAINING POTS.

BY PETER HENDERSON.

Whenever a man sets out to instruct his fellows, in gardening or anything else, if he fail to practice as he preaches then he is certainly deserving of the sharpest criticism; so that your correspondent, "J. B.," of Frederickton, N. B., is perfectly justified in asking why I now use drainage in flower pots, when in Practical Flori-

culture (which I wrote in 1868), without qualification, and rather dogmatically, I denounced the practice. That is now nearly eighteen years ago, and I frankly admit that the larger experience of the intervening years has convinced me that such a sweeping condemnation of this method of pot drainage was an error, which I have, to some extent, atoned for in some of my more recent works. In the article on "Drainage," in *Garden and Farm Topics*, published in 1884, I use the following words:

"Many years ago, in some of my first writings on the subject of drainage in pots, I admit to having taken rather too radical grounds against the practice, because, in those days, everybody almost used to 'crock' or drain the very smallest pots. The absurdity of this soon became apparent to me, as I found that, with hardly an exception, for plants in pots up to the size of four inches, it was worse than useless to drain; and as all my practice up to that time had been with pots but little larger than four inches, I rather rashly jumped to the conclusion that in our warm, dry atmosphere, the European practice of crocking all sizes of flower pots, might be wholly dispensed with. But added experience showed that even in our dry atmosphere, flower pots of four inches in diameter and upwards, in which are grown roses or other plants whose roots are sensitive to moisture, had better be crocked or drained. It is not pleasant to admit an error, particularly when promulgated in print for the 'instruction' of others; but it is better to make what amend is possible by making the acknowledgment, than to continue to stick to opinions before given, when there is reason to believe that these were formed in error."

Still, we do comparatively little crocking or draining of pots. With ninety-nine hundredths of our stock, whether grown in large or small pots, no drainage whatever is used. But in new roses, or other plants where the best growth is wanted in the shortest time, we now believe it is best to use drainage; but when it is done at all it must be done thoroughly. The mere placing a piece of broken potsherd in the bottom of the pot, I believe to be of no benefit whatever. When we now drain at all, we let the drainage occupy one-third of the depth of the pot, be it large or small, although we never use it in less than three-inch size and rarely then. We first use a piece large enough to cover the hole in the bottom of the pot, and then fill over this with a size varying according to the size of the pot, from the size of peas to as large as broad beans, and then, above all, if the

drainage is to be of any value, we cover over this with sphagnum, or, what is better, the thready part of cocoanut fibre, so as to completely prevent the soil washing down among the drainage. This complete drainage not only allows the water to pass off, but, what is of equally great importance it admits the air to the roots. The experience of the past few years has caused many of us to change our opinions very radically on this subject. Less than ten years ago the best rose-growers, when bedding their roses on benches, used eight and nine inches of soil, placed on ordinary board benches, with little provision for drainage. Now the plan is to use only about four inches of soil, placed on sparred benches, made with weather strip three inches wide, leaving a space of nearly one inch between, to admit the water to pass off as quickly as it is poured on; and although roses were often grown well by the old method, yet, it cannot be denied that better results are obtained from the shallow benches, through which the water passes off at once.

Jersey City Heights, N. J., December, 1885.

INEQUALITIES IN LAWNS.

BY MR. CHARLES E. PARNELL.

In the GARDENERS' MONTHLY for November 1885, under the heading of "Seasonable Hints," page 323, I noticed an item on filling in inequalities on lawns. I do not desire to be critical, so I trust you will pardon me for suggesting, that in my opinion it would be far better to carefully remove the sod, then fill in with good rich compost; replace the sod and be careful to firm it down well with the back of the spade.

As far as my experience has extended, I find where the earth is placed in hollow places, and grass seed sown, it will grow and do well enough until hot dry weather sets in, and this causes the young plants to dry up in a very short time.

When the sod is not covered more than two or three inches, it may come through if the grass sods have strong and vigorous roots, but where the grass has been cut severely, it comes up so slowly and irregularly that it is not safe or advisable for any one to rely on its so doing, where a satisfactory lawn is desired from the start. At this season of the year when garden work is not so pressing, it is an excellent plan to go over the lawn carefully, and remove all perennial weeds, such as dandelions, plantains, etc., by cutting them out with a stout knife. If this work is properly done there is very little danger of the plants

ever appearing again. I have known this plan of removing weeds from lawns to be condemned by some persons, but upon a close examination always found that the work was improperly performed.

Queens, N. Y., Nov. 4th, 1885.

[We are much obliged by this timely caution, for we doubt whether it would be wise to treat a hollow, even two or three inches, on the plan we suggested. It only referred to very slight inequalities—say an inch or less.—Ed. G. M.]

MY EXPERIENCE WITH SOUTHERN GROWN ROSES.

BY WM. C. WILSON.

Having for the last eight years purchased from florists in Savannah, Ga., from five to ten thousand Hybrid Perpetual roses every fall, would state that I have had as good results with them as with any I have ever imported from Europe or elsewhere. I received last year, about the first part of December, ten thousand roses of all the leading Hybrid Perpetual varieties from that section. They were all potted, part of them were put in a cellar, and the remainder in a cold greenhouse, and I did not lose ten plants from the entire lot, and they made as fine and vigorous growth as any imported roses I had. Moreover, they were all grown on their own roots, which is a very desirable advantage. Mr. Gabriel Marc, florist, Woodside, L. I., who is one of the very best pot rose growers in this section, has purchased from florists in Savannah, Ga., for the last thirty years, in quantities of from three to five thousand, Hybrid Perpetual roses yearly. He has had as good results with them as with any he imported from Europe, which he does yearly in quantity. I consider if the roses from the South when not lifted before the first part of December and then are handled with ordinary care, the results to the purchaser of them ought to be as good as any imported stock from Europe or elsewhere.

Astoria, Long Island, Dec. 7th, 1885.

THE SWEET PEA, AND HOW TO GROW IT.

BY E. M. VAN AKEN.

Plant very early in the spring, or as soon as the frost will allow of spading the ground four inches deep, (the depth they should be planted) or deeper if the soil is light. Don't wait for fair weather. Use plenty of seed, so that they will not be more than an inch apart. Hoe the earth towards the vines a little, but do not form a ridge, and support

when about six inches high, with brush five feet in length. As soon as they commence to bloom, mulch heavily close to the vines, extending a foot on each side of the row; this keeps the ground moist and cool, which is just the condition they require. In case of a drouth, they will need watering, in addition to the mulching. If the flowers are persistently cut before the seed pods form, they will bloom until the frost kills them. If seed is wanted, they may be allowed to go to seed, but this lessens the amount of bloom, and the vine finally matures and dies. As it is well for one to grow his own seed, and be able to select such varieties as are most desirable, a good plan is to plant a few very early, as recommended, and then make another planting the first of May. These will come into bloom by the middle of July, and the early planting may then be allowed to go to seed. The Sweet Pea luxuriates in a cool, damp soil, and in full sun, or at least should have the sun part of the day.

If the above directions are followed, there is no reason why any one should not successfully grow the Sweet Pea.

Varieties.—Adonis, Butterfly, Scarlet Invincible, Blue-Edged, Crown Princess of Prussia, Black, Scarlet, Pure White, Purple, White with pink blush, Painted Lady, Fairy Queen, Pink striped Mahogany, Purple and Maroon, Red with purple striped, Pink and white striped, Lavender and pink striped, Pink and Magenta striped, Maroon with purple striped. *Elmira, N. Y.*

EDITORIAL NOTES.

SNOWFLAKE TREE.—The *Canadian Horticulturist* says this is the garden name in Germany of our White Fringe. This is near the "Snow-drop tree," which is *Halesia tetraptera*.

COMBINING FENCES.—Since the idea of combining shrubs too weak to form in themselves protective fences, with a few strands of barbed wire to give them the necessary force, a number of plants are being named for use that had no value before as hedge plants. Mr. Manning of Massachusetts, has introduced the red "Osier" or Dogwood, and we think it one of the best that has yet been named.

MIXED BEDS.—Much interest is given to beds of Rhododendrons and other plants that flower but once a year by putting in Gladiolus, Lilies or

some other plant between them that flowers at at other seasons. We saw some very gay effects from Chrysanthemums among Rhododendrons the past season. Lilies are said to work well with roses.

ACER MACROPHYLLUM.—The Oregon maple we saw for the first time in flower under cultivation in Philadelphia this year. In foliage and habit it is superior to the Sycamore maple, its near neighbor. Like all things from the Pacific coast, however, it misses the atmospheric moisture it so much loves in its native place, and always gets killed back more or less when young. When it finally reaches a good height, it seems hardier.

NEW OR RARE PLANTS.

WHITE COQUETTE, OR COQUETTE DES BLANCHES ROSE.—A very beautiful white hybrid perpetual rose, under this name, was figured in the *Journal des Roses* for June.

A NEW PITCHER PLANT, SARRACENIA COURTII.—In the old world, where people study to get as much pleasure out of their gardens as possible, they take special pains to suit the cultural conditions to the wants of the plant. If in our country we were to propose to cultivate those beautiful hardy pitcher plants, which are the pride and glory of our swamps, the answer would probably be: "We have no swamp." But the amateur Englishman makes his swamp, and grows his plants accordingly; and intelligent Americans have to go to the old world in order to learn how much interest may be found in plants natural to their own wilds. This is particularly true of that remarkable genus of plants known as the *Sarracenia* or pitcher plant. *S. purpurea* is so hardy that it is found far away to the north, and many of the others are nearly as hardy.

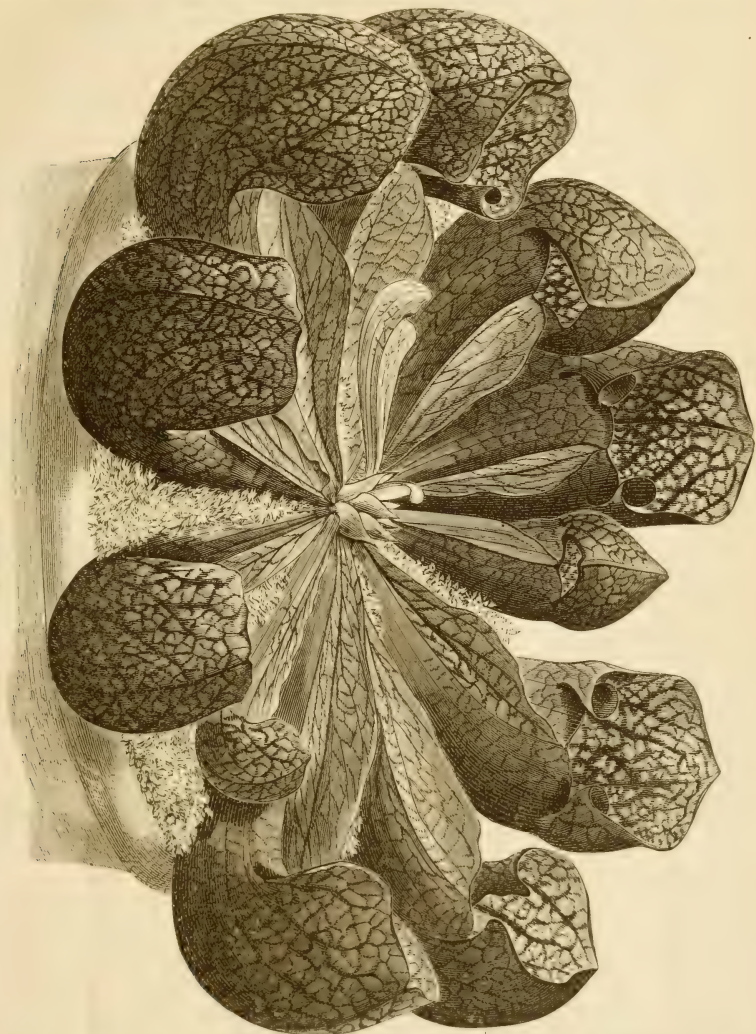
In England the demand for them is so good, that one leading firm, Messrs. Veitch & Son, has been led to work on their improvement, and the one we now figure is a hybrid raised by them, and which they have named after a very estimable gentleman, well known as their traveling representative on this side of the Atlantic. We give the following account of it in Messrs. Veitch's own words:

"It was raised at our Chelsea nursery from *S. purpurea* and *S. psittacina*, the last-named being the pollen parent. Like those of both parents, the pitchers are procumbent, but more symmetrically

disposed than in either, radiating from all sides of the root stock as regularly as the leaves of a rosette. In form and size, they are well nigh in-

nates abruptly, having neither the parrot-like head of *S. psittacina*, nor the crisped flap of *S. purpurea*; the wing is deep, curved above, gradually con-

Sarracenia Courtii.



intermediate between those of the two parents; the petiolar tube, which is much contracted at the base, gradually dilates upwards to the aperture; the lamina or flap is turned upwards and terminating towards both extremities. In color, this hybrid is one of the finest yet obtained; the young pitchers are bright crimson-purple from the middle upwards, veined and reticulated with deep

crimson-purple. They change with age to a deep blood-red with blackish purple veins, the reticulations being particularly handsome and striking.

"The elegant habit of the plant and its rich coloration, render it one of the most ornamental of *Sarracenias*. It has received a first-class certificate from the Royal Horticultural Society (unanimous vote), and a certificate of merit from the Royal Botanic Society."

BOURBON ROSE, MADAME PIERRE OGER.—Bourbon roses, not having the odor so popular with cut-flower folk, are yet among the most desirable for out-door decoration. No one would want to be without the *Hermosa*, though it might not be as fragrant as a *Bon Silene*. The *Journal des Roses* gives a colored plate of the above-named, and styles it a first-class rose. It is pale salmon, with a tint of cream. It is a sport from Queen Victoria, fixed by M. P. Oger, a rose-grower of Caen, and named for his wife. It appeared in 1876, and was sent out by Verdier in 1878.

PRINCESSE STEPHANIE PELARGONIUM.—This is regarded as one of the best of the new race of Liliputian Geraniums, of which we have now Comte de Flandre, Comtesse de Flandre, Comte de Hainaut, Souvenir de Louis Van Houtte, and Princesse Clementine.

The little plants bear an enormous number of very large heads, double as "daisies," though the plants are only a few inches high.

PHACELIA PARRYI.—This remarkably pretty annual, discovered a few years ago in Southern Utah, by Dr. C. C. Parry, has at length found its way to the seed trade.

DOUBLE PHLOX DRUMMONDII.—It is surprising that this old favorite has so long resisted the endeavor of the florist to produce a double variety, but it has given up at last.

NEW GERMAN ASTER.—Among the novelties of the coming season is a German Aster, four and a half inches across, very double, with each floret rolled up like a needle.

JAPAN FRINGE TREE.—The *Gardening World* illustrates *Chionanthus retusus*. The white flowers seem to be in erect cymes instead of in loose pendulous racemes; and the petals are only about an inch long, and blunt instead of tapering to fringe, as in our species. It was introduced from Japan by Veitch.

SOUVENIR DE VICTOR HUGO ROSE.—A colored plate appears in the October number of *Journal*

des Roses. Unlike most tea roses, it seems to bloom in clusters. It is a yellow rose, but with such deep rosy edges as to appear like a red rose at the first blush. It was raised by M. Bonnaire, of Lyons, in 1884, from seed of Comtesse de Labarthe, that had been fertilized by the old *Regulus*.

SCRAPS AND QUERIES.

IVY ON TREES.—"S. T. W.," Forest Grove, Oregon, writes: "It may be interesting to you and some others to know that the English ivy blooms here profusely, and that it is a famous honey plant. A few days ago I picked a bunch, and to my surprise found many of the flowers completely covered with a pure white sugar. The plant from which it was taken grows on a large oak tree, covering the trunk for about twenty-five feet, and bids fair before many years to entirely cover it. From your knowledge can you say whether it will finally kill the tree or not?"

[The ivy does no harm whatever to trees, so long as it is confined to the trunk and large branches. If the ivy extends so far as to interfere with the foliage of the tree which supports it, then it is an injury.—Ed. G. M.]

LINDEN ARCHES.—"H. L.," Boston, Mass., writes: "I have read several pieces in your MONTHLY about hedges with wire fences, and I want very much to know if you have ever made a pleached alley, and if so, whether you used Lindens, European or American, or Willows, Bay or Golden, &c.; or what tree you used, and how much space one must allow for breadth of Lindens or Willows each side of the walk; whether they would be best trained on wooden trellis or wire trellis; also, how many years it would take to grow them over the walk. How wide should be the walk, how high the arch of trees? I am made bold to give so much trouble by the good-natured replies I see in your journal constantly to similar inquiries."

[The Editor has had no direct experience in this work, and would be obliged if some correspondent who has, would answer these inquiries. There are, however, some general points that will be well remembered. There is a tendency in many plants to get naked at the bottom, and keep all the foliage at the apex, hence the plant employed for pleaching and arch training should be of those plants that have a natural tendency to keep the foliage to the ground. For small arch work there is nothing of this character

superior to the Hornbeams, but the plant is too low a grower for the larger archways that are so effectually employed in Europe. These are mainly of the European Linden. The American Linden would do as well and better for our climate. As far as our memory extends, some of the most successful specimens of trained Lindens in our country, are at the Soldiers' Home, Dayton, Ohio, though there may be others not remembered just now. Wire ought to be good enough for training on. The trees might be planted twelve or fifteen feet apart. The height of the arch will depend on the width of the avenue. If very high it will be difficult to prune or train.—Ed. G. M.]

RED SPIDER ON EVERGREENS.—Mr. D. H. Watson, Brenham, Texas, says: "In your November issue you mention that little, but great pest, the red spider, and recommend a syringe as a good means of destroying them. We have found this a good remedy as they can't stand moisture; but the most effectual way that we have tried to destroy them is by sprinkling sulphur all over the tree or bush. With us they are sometimes very bad on *Retinosporas*, and *Cupressus pyramidalis* and *horizontalis*, but we have never failed to destroy them by one good application of sulphur."

[To this excellent suggestion, we may add, that the application will probably be the most effectual in a hot or sunny time.—Ed. G. M.]

THE BASKET OR BAGWORM.—"G. W. D.," Baltimore, says: "In your general remarks in November number of *GARDENERS' MONTHLY*, you speak among other things of the 'bagworm' plague. Although I have them picked off every summer from my *Arbor Vitæ* hedge, which they particularly fancy during the time that they make their appearance—though they are also found on other plants—yet, every summer they appear again, and in the same quantities. How do they get there? or rather, how are they propagated? a question I would like to see answered in your next publication in order to prevent their re-appearance—since an ounce of prevention is better than a pound of cure—for it is a terrible labor to pick the thousands of these pests."

[It must be that the "bags" are not gathered up wholly, but enough left to form a new crop, for they are unable to travel far. The female never leaves the house in which she is born. The eggs hatch in the spring, and the little worms hatched, go out in the world on their own account, each to make its own bag, and cannot travel over many

yards away. The female in the bag, will sometimes drop to the ground, and march off to where there is more food,—but this cannot be many yards. The female has no wings to fly with. The male has wings, and flies, but this cannot exceed the colony. There is nothing more certain than that persistence in cleaning off the cocoons will destroy the whole crop, and leave one's trees wholly free from their attacks.—Ed. G. M.]

GRASS FOR SHADE UNDER TREES.—"M. B.," Kensington, Phila.: There are a number of grasses that will do fairly well under trees, where the ordinary lawn grasses fail, if the ground be dry, but not very dry. The English sheep grass, *Festuca ovina* is one of these, and the flat stemmed blue grass, *Poa compressa*, is also good. We have no grass seed catalogue at hand, but these kinds can no doubt be had of first-class seedsmen.

THE ELM BEETLE.—"Mrs. M. C. B.," Yonkers, N. Y., writes: "I wish to ask you if there is any way to destroy the worm that eats the leaves of the elm, or if there is anything that could be put round the tree to prevent the worm crawling up. We have a large elm tree in front of our house, and last summer almost every leaf was eaten. I would be much obliged for any information you can give me."

[The "worm" does not crawl up the elm tree—no protection from that point of view is practicable. The trouble comes from a small beetle, which flies up into the tree, deposits its eggs on the leaves, which then hatch, and produce the "worm" that works so great destruction. After a certain time the "worm" crawls down the trunk of the tree, in order to undergo in the earth the transformations necessary to reach again the beetle state. It has been recommended to pile earth around the base of the tree, and then remove and burn it, thus destroying the whole crop of travellers down the trunk. This secures the tree, in a great measure, the next year, from the descendants of those which injured it this; but unless every person who has an elm tree in the vicinity does likewise, it is akin to the efforts of those who would dip out the ocean with a bucket. The beetle will come from other places next year. If the beauty of the tree be worth the trouble, the only sure method of preserving it is to get a powerful garden engine, and force a solution of Paris green or London purple over the leaves which are being eaten by the worms. This destroys the creatures at once, and saves the tree for the season.—Ed. G. M.]

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

A lady wants to know whether there is any use in watering plants in windows with warm water. She thinks there is, but a neighboring florist tells her that is "all nonsense." He "waters fresh from the cold pump," and his plants are "good enough for anybody." So far as we know the florist is right, as far as good healthy plants are concerned; but if the idea be to hasten plants into a blooming condition, warm water will surely have an advantage over cold. Window plants are chiefly desired for winter flowering. And in houses devoted to forcing roses or other things, it would be a great advantage to use warm water if it could be conveniently had. The same lady says she finds great advantage in not filling the pots to within an inch of the surface, and then filling the space tightly with moss, so that it is rounded up under the plant over the surface of the pot. She says she knows when the plant wants water, by the color of the moss. This may do for an experienced plant grower; but the fear would be that some without experience would find the earth get dry before the change in the tint of the moss was observed, or that sometimes too much water would be given. The chance of seeing the soil itself is a great aid to the plant waterer. Still, it will be that after the moss has been long enough on the pot to permit of the roots of the plant getting up from the earth and into it, that is, to have the roots permeate the moss, the plants would do very well. Roots do not want water so much as they need moist air, and they get the best opportunity for this when pushing through damp moss. The question of watering underlies most of the success in pot plant growth or any other kind of growth, and it cannot be too closely studied by those who love to grow flowers. Plants that rarely get dry are seldom healthy. Saucers of water under pot plants are excellent. This plan admits of letting the upper part of the pot become dryer than otherwise, and thus the soil is well aerated, while roots in the water will get all the moisture the plant needs. Indeed, if a plant has so many roots in a pot, that numbers will go through into the saucer, the plant would in many cases be all the better for receiving water in no other way.

The present season is one of the best for studying the working of systems for heating greenhouses. In a large number of cases that come under our observation from time to time, the cart is evidently before the horse. Inventors of new boilers or new methods of heating fix on one principle that cannot be controverted, and the apparatus so constructed gets no end of advocates. A few years ago, heating by means of many coils of pipe was very popular. The principle was that by dividing up the water into these numerous small sections, it could be more rapidly warmed. This was true, but friction, as an element against rapid circulation, was forgotten, and it was then discovered that a rapid circulation was of much more consequence than rapid warming.

Besides studying the best heating apparatus, the temperature of the greenhouse at this season should be maintained at about 50°, allowing it to rise 10° or 15° under the full sun, and sinking 10° or so in the night. Though many of our practical brethren differ from us, men, for some of whose opinions we entertain the highest respect, we do not recommend a very great difference between night and day temperature; we think 10° ample allowance. It is following nature, no doubt; but we would rather strive to beat nature. She cannot make the specimens we do, nor flower them so beautifully or profusely, and in many other respects we think the practical gardener can much improve on her red-tape notions and old-fashioned courses.

COMMUNICATIONS.

PHAJUS GRANDIFOLIUS.

BY CULTIVATOR.

How often one meets this old but useful subject eking out an existence under conditions so unsuited to its needs, that it is never able to reward the owner with a single spike of its lovely blossoms. It is classed among the Orchid family, is a native of Hong Kong; and to develop its blossoms in midwinter, should be treated to a temperature of from 55° to 60°. During summer (being its season of growth) it delights in plenty of heat and moisture. Lumps of fibry loam with the fine shaken out, mixed with an equal proportion of old dry

cow manure, with plenty of broken crocks and charcoal, is an excellent compost in which to grow it.

An old neglected plant that had not flowered for years was treated as follows during the past season. As soon as signs of fresh growth had begun in spring, all the old soil was shaken off and the roots washed clean, then potted into compost as above. Water was given very sparingly until the roots from the young growths began to lay hold of the soil. The pot, a 7-inch one, is now a mass of roots, and is watered almost daily with



Phajus grandifolius.

manure water. The growths, three in number, have leaves on two feet long, and each growth is throwing up a strong flower-spike which in a short time will amply repay us with their gay blossoms for any extra care bestowed thereon.

Cow manure that has been well-dried in the sun during summer, we find excellent for a good many Orchids. *Cypripedium insigne* we grow in nothing else but sphagnum and cow manure with a few broken crocks among it. I have known plants of this brought to bear two flowers on a spike in such compost, which had never been

known to do so before, although considered good plants. A plant of *Oncidium incurvum* potted in the same last spring has made bulbs larger than the imported ones, and is now throwing up some very fine flower spikes. The *Calanthes* delight in cow manure, and once used for them always will be.

South Virginia, Nov. 20th, 1885.

ISMENE AMANCÆSISA.

BY C. E. PARNELL.

The *Narcissus* flowered *Ismene*, *I. Amancœsisa*, rare and very beautiful bulbous perennial plant, belonging to the natural order *Amaryllidaceæ*. It has an egg shaped bulb from which some three or more bright green leaves are produced during its season of growth. The flower scape, which attains a height of two or three feet, bears from three to six rich yellow blossoms which are about six inches across and delightfully fragrant. It is said that this beautiful plant was introduced from Brazil as early as 1808, but it is a native of Peru, and it is said that it can be found growing on the hills called *Amanceos* or *Hamanches* in the neighborhood of Lima, where its beautiful and delightfully fragrant flowers are said to be extensively used by the Peruvian ladies as ornaments for their hair.

This *Ismene* is a plant that can be easily cultivated and the bulbs should be planted in a nicely prepared deep border about the tenth of May, and as soon as the flower scape makes its appearance it should be tied to a neat stake in order to prevent it from being broken off by the wind. As soon as the frost has destroyed the foliage the bulb should be taken and preserved from frost and damp in a manner similar to the *Tuberose* or *Gladiolus*. Propagation is effected by offsets from the larger bulbs, and they should be grown on carefully in a nicely prepared border until they are large enough to bloom.

The generic name was given in honor of *Ismene* the daughter of *Edipus* and *Jocasta*, and the specific name in allusion to its native home.

Queens, L. I.

SOMETHING WORTH SEEING—STURTEVANT'S WATER PLANTS.

BY WM. T. HARDING.

At the suggestion of one whose ripened experience in matters floricultural, seldom errs, I took a trip to Bordentown, N. J., on September 3rd, 1885, to "see something worth seeing." Alighting from an early train at the railroad station, a few minutes

walk brought me to the "Aquatic Garden" of Mr. E. D. Sturtevant. No sooner had I set foot upon these interesting grounds, than I was cordially greeted by the cheery proprietor, whom I knew as a man after my own heart. As each well knew the other's enthusiasm for the cultivation of aquatic vegetation, we were soon on the plank together in the middle of one of the large aquariums, where, for the time being, I seemed to forget, and it is not unlikely he did also, all other subliminary affairs. Possibly, we were both influenced, or actuated, with the "one touch of nature," which the poet says, "makes the whole world kin." If the good readers only knew my friend's predilection for, and the writer's prepossession in favor of, such charming objects as then surrounded us, they would naturally, or instinctively comprehend how enraptured we may become at the sight of exquisitely beautiful flowers, when their delicious perfumes fill the air, and while thus gently stealing over the senses captivate the heart.

A strangely fascinating interest seemed to center among the lovely occupants of the aquarium, whose serene beauty appeared to your correspondent's vision more like celestial creations than living vegetating objects of our mundane world. Let those appreciative souls who have ever felt the enchanting charm, whereof I write, fancy for a moment the paradisaical scene, where peerless beauty reigned supreme, and brilliantly bespangled the placid water with the most lovely, gorgeous, and odoriferous flowers possible to behold, and they will understand the inexpressible feelings the grateful heart enjoys.

That a love of flowers is natural to civilized beings, is an acknowledged fact no sensible person disputes. And when patient industry and skill combine to perfect or improve the natural graces of flowers, in the manner my persevering friend had done—whose indefatigable zeal for that branch of floriculture is so well known—success is assured, as was plainly demonstrated then and there. Indeed, it would be as futile to attempt to "gild the lily, or paint the rose," in brighter or fairer colors than their own, as it is to accurately depict the lovely *Nymphæas* in their varied hues from bright red, to rosy pink, rosy white, pure white, royal purple, azure blue, delicate blue, and yellow. Individually possessed, as are all the species of Water Lilies, with a peculiar beauty of their own, it is exceedingly difficult to decide which excels this, or surpasses that one, where all, without exception, are absolutely superb. The blue and red varieties being more uncommon than the other kinds, their

splendid flowers seemed to first catch the eye with their conspicuous charms. Noted examples of which are *N. Devonensis*, *N. rubra*, *N. Zanzibarensis*, and the unique seedling of the proprietors, in honor of whom it is named *N. Sturtevantii*. Rising a few inches above the large healthy leaves, many of which exceeded two feet in diameter, were numbers of magnificent flowers measuring over twelve inches across.

These few kinds are merely mentioned as fair specimens of what were under cultivation. And while dilating upon their remarkable attractions, memory recalls the time, years ago, when the writer first saw growing in Flinders river, Queensland, in distant Australia, the beautiful large blue Water Lily, *N. gigantea*, which is indigenous to that and other rivers in that interesting colony. And what particularly renders it noteworthy, is the recollection of a serious disaster which befell me, when the boat capsized in which we were crossing the swollen turbulent stream, among the greatest profusion of Water Lilies of this species, which obstructed our passing through, and where with the greatest difficulty I was rescued from drowning. Also of much interest to lovers of the beautiful, is the crimson *Nelumbium Liechardtianum*, a most splendid species, I first discovered blooming in the Ballone river, which is so called after the name the aborigines know the plant by. It is also a native of the same section of continent, the peculiar flora of which has been frequently described.

In addition to a large and choice variety of Water Lilies, were *Pontederia*, *Sagittaria*, *Limnanthemum*, *Trapa*, *Junca*, *Apongeton*, *Cyperus*, *Nupur*, *Valisneria*, *Calocasia*, *Typhea*, *Zizania*, *Phragmites*, *Trianaea*, *Azolla*, *Pistia*, *Limnocarhis*, *Hedychium*, *Papyrus*, *Ceratopteris thalictroides*, *Nelumbium* in variety, *Ouverandra*, &c. Of the last-named, *O. fenestralis*, the Lace Leaf, or Lattice plant of Madagascar, is a natural curiosity, with which nothing else in cultivation can compare in the vegetable kingdom. The peculiar structure of its skeletonized leaves closely resembles the finest samples of rare old point lace, and may be considered one of the most interesting plants of the collection.

The persecuted natives of that beautiful, and until recently, flourishing island, (who were steadily advancing in civilization, having been successfully raised from a state of gross idolatry, through the efforts of protestant missionaries, to a knowledge and practice of Christianity, and continued to progress therein, until a meddlesome European power,

whose cupidity for so valuable a possession incited them to forcibly seize) make use of the Yam-like roots of this singular esculent, which are said to be palatable and nutritious.

As an experiment, Mr. S. had immersed some six or seven nice plants of this curious genus, in one of the large tanks in the open air, and which, to all appearance, were doing as well as those submerged in a tank under glass.

As yet, in my cursory remarks, I have scarcely alluded to the *Nelumbium speciosum*, a stately, odorless, and extremely beautiful aquatic. This interesting and highly-esteemed plant, has from remote times, been a favorite in the orient, and, apparently through the efforts of Mr. S., it is as likely to become as popular in this hemisphere as it is in distant lands. Adjacent to the spacious tank I have more particularly noticed, is another of the same dimensions, in which flourish in like manner to the plants in the first one mentioned, fine clusters of several species of *Nelumbium* and other aquatics. From seed sent from Japan, this enterprising florist has raised a vast number of seedlings, which he is hopeful will produce something new. Already a lovely pure white seedling of his, a charming novelty he highly prizes, has, to his great delight, displayed its primal loveliness. During the next summer, I trust my praiseworthy friend will be well rewarded for his patient pains, with a number of novelties among his seedling *Nelumbiums*.

The next in order was to view the majestic *Victoria regina*, which mainly occupied another large tank, and of which it is truly said, "this great Water Lily of the Amazon is the grandest of all aquatics." And yet, notwithstanding the many excellent descriptions the most accomplished and racy writers have given of its regal splendor, they nevertheless, with all their graphic powers, significantly fail to properly portray its grandeur. Like the magnificent spectacle of a tropical sunset, it must be seen to realize how grandly gorgeous is the glory thereof. To my flower-loving friends, I would kindly advise them to pay a visit there during the coming summer, and a pleasant chat with the successful cultivator, who has for years made a specialty of growing aquatics, and is consequently familiar with all that is known about their management; besides being well versed in the mythical lore and fascinating legends, with which the historian, poet and novelist have surrounded them, is an excellent treat, well worth walking many miles to enjoy.

After examining with the greatest interest im-

aginable, more pretty things than I have mentioned, there was still reserved for my admiration and astonishment, as a grand finale, I suppose, to the many rare sights I had already seen. To give an idea as a preface to the prospective pleasure the gentleman had in store for me, I must quote his own perspicuous language, verbatim, to wit: "I have something specially interesting to show you; I think it is the most wonderful exhibition of plant life to be found outside of the tropics. It consists of a plantation of *Nelumbium speciosum*, naturalized in a mill pond, over which I have control, two miles from here. It covers about half an acre, and the growth is most marvelous. I measured one leaf yesterday, which was three feet in diameter, on a stalk five feet high. And many leaf stalks and flower stalks are six and seven feet high. Some mornings there have been more than one hundred noble flowers open at once." Inducements so irresistible were gladly accepted, and in company with his brother-in-law, the Rev. Dr. Pease, a missionary at the Caroline Islands, then on a visit to his sister, Mrs. Sturtevant—and who happily proved to be one of the most agreeable and intellectual companions possible—and while eagerly listening to his experience as a devoted missionary among the heathen, and to his interesting description of the remarkable fauna* and flora of the Islands, we pleasantly made our way, in care of our smiling cicerone, to view the the unparalleled flowery scene.

No cool September morning could possibly be more favorable for enjoyment than this was, especially after the intense heat which for some time previously had been well nigh unbearable, and had been delightfully tempered with copious and refreshing showers. The country roads and lanes were gently winding before us, with the rain washed grass bordering the sides of the wagon way, and from which, in picturesque profusion, grew many handsome wild flowers, bespangled with dew. As prominent and conspicuous symbols of approaching autumn, were several species

*The species of quadrafauna, indigenous to the group of islands, are few in number, and small in size; while the avifauna is more extensive, and of brilliant plumage. There is much arborescent growth, of a varied character, some of which attains to fair-sized timber trees; beneath which, dense masses of graceful ferns closely cover the ground. The *Artocarpus*, or Breadfruit, and *Cocconut* trees, bear abundantly. Of useful herbaceous growth is the *Pandanus* fruit, of which the natives distinguish sixty varieties, which have an acid flavor; while one species is decidedly sweet. The *Banana* too, freely yields immense crops of wholesome fruit. But *Yams*, and *Taro*, a species of *Caladium*, are mainly relied upon for the general supply of food.

of *Solidago*, or golden rod; *Vervain*, *Eupatorium*, *Achilla*, *Astragalus*, *Rudbeckia*, *Elecampane*, *Vernonia*, *Gnaphalium*, etc.; with some pretty kinds of *Asters*, which were then in the zenith of their glory. In this instance, these comely wayside flowers were not "born to blush unseen." As we passed along the road, from many a trellis and arbor, about the cosy cottages and comfortable farm houses, came the fruity or vinous smell of ripe grapes; while the thrifty orchards were redolent with the pleasant odor of mellow, rosy-cheeked apples and peaches, which in the great abundance were bending the boughs.

Through rural scenes like these where everybody seemed prosperous and happy, we approached the romantic leafy spot among the bushes—through which we made our way by descending zigzag paths to a secluded dell through which ran a clear brook, and by banking up across its course, lower down, was formed a large lake-like mill-dam. By the tree fringed margin of which, in measured monotony, rumbled the mill. Much amazed with the beautiful and astounding sight so suddenly presented on reaching the bottom of the flowery glen, I silently looked on for a while, unable to express my delight and surprise which the scene occasioned. Our guide having provided himself with a water-proof suit to put on when gathering water flowers, which are readily disposed of among the Philadelphia florists—waded into the water among uncountable numbers of large peltate, shield-like foliage, borne on footstalks varying from three to five feet high and above which, waved the many tall and splendid rosy tinted floral scepters of the famed *Nelumbium speciosum*. One of these, when laid at my feet, measured over eight feet in length. It was both interesting and amusing to watch them while moving and swaying about, with the balmy zephyrs wantonly playing among the sweet flowers. The leaves gently yielding to the soft pressure, seemed to gracefully bow, with more becoming elegance and ease than either the polite *Brummell*, or courteous *Chesterfield* were capable of, in their true allegiance to the life giving sun-god above, to which all mutually turned.

Convincing proofs were before me that I had realized all, and even more than was promised, and, as was to be expected, I felt highly pleased with what I had seen. Their luxuriant growth plainly indicated how thoroughly they were acclimated, or naturalized, where they had passed through two severe winters unhindered. With these facts before us, it is to be hoped we shall

see a more extensive cultivation of them in the future, as in any fair sized tub, tank, aquarium, pond, or water hole, they may be grown.

In regard to this ancient and historical plant, we may infer from the statement of such an observant and well informed person as was the late J. C. Loudon, that "the holy *Cyamus*, or Pythagorean bean of antiquity, is the product of the *Nelumbium*, a stately aquatic, which abounds in all the hotter countries of the East, where the roots are frequently used as food." That many sentimental writers have often seen fit to laud the lovely *Water Lilies* is well known; and that two of the most popular authors of their time did not deem these elegant flowers beneath their notice, is evident, from the following remark:

"The water lily in the light
Her chalis raised in silver bright,"

Was undoubtedly *N. album*, which Scott must have frequently found floating on the bosom of many a pellucid pool, tranquil lake, or lonely forest mere, so common to the sequestered glens of the land of the heather bell and bonnie broom.

While another enraptured poet, possibly Moore, than whom, none could discern and gather "Fancy's brilliant flowers" more skilfully than himself essays to unite in poetic wreaths with the real ones. These were plentiful about the remarkable waterfalls, picturesque cascades and fountains in the Vale of Cashmere, celebrated for its romantic beauty; and who, when enamored with the angelic charms of some eastern maid, naturally invokes, as guileless witnesses to his ardent passion, in poetic fancy, of course,

"The flowers of the valley all bending with dew,
And the sweet water lily of exquisite blue;"

This lovely blue, star-like flower, travelers in that country have oftentimes admired, I suppose, would be *N. stellata*. And no more flowery theme, I opine, could possibly be chosen than to extol the transcendent beauty with so pleasantly suggestive a name, as our native rosy sweet-scented aquatic the famed *Water Lily* of Cape Cod, *N. odorata roseum*, of which kind, Mr. S. grows largely. And it yet remains for some gentle bard to softly sound his lute, and sing a melodious lay to so fair a flower.

In summing up these desultory remarks, I must truly admit that the refulgent glory of the *Nymphaeas*, *Nelumbiums*, and other interesting plants, were, on the day I went to see them, too beautiful ever to forget. And while penning my impressions of them, in imagination, I see them still as lovely as when I actually gazed upon them,

borne above, or floating upon the glassy surface of the water, which glistened in the beams of the morning sun. The subtle shades of exquisite coloring, which showed the marvellous touches of the Master, no earthly artist could imitate; and the beauty of which, for want of proper language to express the magnificence thereof, I am compelled to abruptly close the subject.

Mount Holly, N. J.

STEAM HEATING A SUCCESS.

BY AN OHIOAN.

It appears to be a weakness with a good many florists to multiply the number of feet of glass they own, especially when bringing themselves before their brother florists. E. Hippard's greenhouses as described by N. B. Stover, as containing over 12,000 feet of glass, cannot (according to my measurements a few days ago) be anything but a mistake. I could not make out much more than the half of this amount, but perhaps I cannot measure so correctly as Mr. Stover. The ground occupied by the houses covers only a space of between 5,000 and 6,000 square feet; and how 12,000 feet of glass can be put on this I know not. Now, as to the price of coal, the meanest kind of bituminous slack can be had on the track for one dollar per ton of 2,000 pounds, and Mr. Hippard having no horse of his own, would have to hire the hauling, which would not be less than twenty-five cents per ton; this would make the slack delivered, \$1.25 per ton. I consider, however, that for heating greenhouses, that at the very least one ton of hard coal is worth two tons of soft coal, even good lump coal, and certainly worth a good deal more than poor slack.

Therefore, Mr. Chaapel, do not leave Pennsylvania and come to Ohio expecting to have your greenhouses heated for almost nothing. Although Youngstown is right in the centre of a mining district it costs just about as much to the florists to heat their greenhouses here as it does in the east.

It takes a certain amount of heating material to heat a given amount of water sufficiently to make steam, and I consider there is just as little waste heat passes off from the Exeter heating apparatus of Mr. Chaapel's as from the locomotive boiler of Mr. Hippard's. And furthermore, from what I have seen of both boilers, I consider that one ton of hard coal in the Exeter boiler will produce as much steam as two tons of our lump coal costing \$2.00 per ton, will produce in the locomotive boiler.

I know from considerable practice, that one ton of hard coal in a Hitching's corrugated boiler will maintain a higher temperature for the same time, than two tons of our best block bituminous coal.

There are two classes of people daily to be met with. The one is continually trying to make out how much can be accomplished without much outlay. The other is just the reverse, making everything cost much more than it really does. The first is the more hurtful in the florist business, and has been the means of making many a one spend much time in trying to get something for nothing.

[It has often been felt that a definition of "feet of glass" would be very desirable, as the expression is very indefinite as it stands. Some, and we think this is the general idea, understand the square feet of roof surface, but we are told others include the square feet of the glass sides and gable ends when there are any. Then there are some who mean by a thousand feet of glass, a thousand square feet of earth surface covered by glass. None of these definitions will tell just what it is desirable to know when we talk about heating, namely, the number of cubic feet of air in the house the heating apparatus has to warm; but still the number of "feet of glass" gives an approximation, and it is well to keep up the expression. But we should like an expression of opinion whether it would not be better to have it generally understood that "feet of glass" means square feet of earth surface.—Ed. G. M.]

FIRE HEAT AND PLANTS.

BY N. ROBERTSON.

Although I write from a climate putting a severe test on fire heat in its relation to plants, owing to the long duration of its winters, some of my remarks may apply to those more favorably situated than we are. The length of time we have to submit to artificial heat without any ventilation makes it a point of consideration how far nature will bear this without detrimental effects. I am no admirer of strong fire heat for many plants now subjected to it, but find in many cases that a more moderate temperature is better. To argue that fire heat and sun heat are two different things, as regards plant growth, would be unnecessary. Every plant grower must be aware of that. The one is accompanied by a dull cloudy sky, the other with light and natural heat so beneficial as seen in all flowering plants. Little sun, few flowers, is the general rule.

My argument is that there are many plants subjected to this forced heat because they are from a tropical climate, and will endure no other, live, and be in health. My experience has taught me a different lesson. I shall not enumerate the many cases in which I have practiced with most favorable results. I will leave these trials for persons themselves to find out. One point I may remark is, that much of the success will depend on the manner in which water is applied. Those plants must not be deluged with water so as to make the soil cold and clammy. The soil used in this state must not be of a close binding nature, or your trials are sure to be a failure. No more water must be applied than just sufficient. The oft repeated "drain-perfectly" must be perfect. One thing has proved to me, that if a plant is much subjected to insects, this change will greatly ameliorate that condition. What I prefer is, to grow my tropical plants in the summer, and then retain their beauty through the winter months. Continued forcing has a weakening effect. Take the lower temperature plants, and subject them even to their native temperature by the fire heat, and you will soon see how they will succumb to all sorts of disease and insects. There is no doubt but the great outcry so frequently heard is caused by overstraining nature's ability to perform her functions quicker than she is able properly to mature them. Evergreens are nearly always treated as ever-growers, due respect seldom being paid to a resting season. In a climate such as ours, where our houses may be said to be hermetically sealed for at least five months of the year, with no possibility of ventilation under our present system of ventilating, opening ventilators causing cold draughts from the outside, would destroy any thing in close proximity to them, and above all things to be avoided.

An excessive night temperature is probably the greatest drawback. In many instances where no night fireman is kept, in cold weather strong fires are made up late in the night, so as to retain heat enough until morning. When this fire burns up, a high temperature is attained, but by morning it is down to almost freezing. Some will tell you nature often does this very same thing, but I don't think they would consider it favorable to vegetation. A strong night temperature I have a great aversion to. Plants should have a quiet time of rest during the night, or exhaustion must follow. All climates, as far as I am aware, show a decrease of temperature in a greater or less degree at times.

Then I say, avoid as much as possible this overstraining fire heat, and you will find the advantage of it in the end; remembering that much of your success will depend on the care you take in watering. I may be thought conflicting with the florists whose great aim is to supply the market with flowers, regardless often of the duration of plants, or with the propagator who must have heat to enable him to be successful. My aim is only intended for those who grow plants for the decoration of their homes for permanent beauty.

Supt. Gov. Grounds, Canada.

STEAM HEATING A SUCCESS.

BY N. B. STOVER.

In reply to Mr. Harry Chaapel's communication in November number of the GARDENERS' MONTHLY, I admit my communication was rather a query, for the reason that I had not mentioned the price of fuel.

I certainly do not know what Mr. Chaapel's boiler is capable of doing, or whether it is a fancy or a common critter; but this much I do know, that our boiler is by no means fancy, but on the contrary, a very homely looking thing that eats any kind of stuff you give it.

We used the past very cold winter ninety tons of Saw-mill Run slack, at \$1.00 per ton delivered at our place. This slack cokes over nicely, and keeps a good hot fire for a long time, considering the large amount of condensing surface. We fired from one to every three hours, according to the state of the weather.

I have no doubt that many others of the readers of the GARDENERS' MONTHLY were as much surprised as Mr. Chaapel, at the low cost of fuel for heating such a large amount of glass; and I probably was more surprised than anyone. There is, and has been, quite a controversy in regard to the heating of greenhouses by steam, for and against. The general complaint is because the expense connected therewith, generally costing more fuel than hot water; therefore I consider our plan and fixtures a success.

Our place is not very distant from Mr. Chaapel, and a call would no doubt give him quite a relief, and better the condition of his purse a few hundred dollars. We will, or at least Mr. Hippard will, entertain him free of expense while staying here. \$400 for heating the same amount of glass that we heat for \$90, is quite a difference, and certainly I think there must be something wrong somewhere.

Youngstown, O.

EDITORIAL NOTES.

CULTURE OF AQUATICS.—The efforts of Mr. E. D. Sturtevant, of Bordentown, N. J., to make popular the culture of water plants, has met with considerable success, if we may judge by pretty tanks, occasionally seen. One of the most attractive features of Fairmount Park last year, was the water plants. Whoever has water may have these pretty things, and tubs sunk in the ground will do for those who have no natural ponds.

LOPEZIA MINIATA FOR CUT FLOWERS.—The Germans make as much use of this lovely rose-colored flower, as we do of *Stevia* or *Alyssum*, for winter cut flower work. The smallest bunch of flowers in that country is considered incomplete without a few sprigs of *Lopezia*.

WILLIAM FRANCIS BENNETT ROSE.—Some small plants flowered in France last year, and the growers are inclined to go into ecstasies over it.

RED SPIDER.—Red spider, (*Acarus telarius*) is a minute mite of microscopic size, and is first seen with the naked eye as a red moving speck. The genus to which it belongs (*Acarus*) contains an enormous number of species, mostly parasitic in their habits, either upon plants or animals. The present species mostly begins to attack exotics when they are young and tender. The female red spider deposits its numerous eggs upon the under-side of leaves; they are exceedingly small, whitish, and scattered over the leaves. The larvæ, as hatched, resemble their parents save in size; when mature they are of a dark brown color and slightly hairy. Like spiders and mites in general, they moult several times before reaching maturity. They spin for themselves silken webs, which shelter them from weather and other influences.—*Gardening Illustrated*.

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SCRAPS AND QUERIES.

INSECT ON SMILAX.—A correspondent from Allegheny, Pa., sent us some insects a few months ago, which in a note in the MONTHLY we said might be the ordinary Black fly or *Aphis* of greenhouses. There were only a few, and fast to the bottom of the bottle, and we could not get them out without filling with water, and shaking them up and out. We understand that another florist, afflicted by what he believes the same insect on smilax, sent a few to Prof. Riley, who pronounces them a species of *Haltica*, an ally of the turnip fly. Tobacco smoke would hardly destroy these, as they would fall to the ground where the smoke

would not be dense, and come up again. Prof. Riley says insect powder is the best remedy.

NAMES OF NIGHT BLOOMING CACTUSES.—"J. H. S." New Haven, Conn., notes: "In number for October, page 299, 'W. P.' Oswego, N. Y., seems to have mistaken *Cereus nycticalis* for *C. grandiflorus*, and what he calls *C. latifrons* is without doubt *Phyllocactus Hookerii*."

VARIETY OF FARFUGIUM.—Mr. R. L. Blair, Des Moines, Iowa, writes: "In the August MONTHLY, you say *Farfugium grande* is the only variety worthy of cultivation. I send you by mail to-day a box of leaves from a variety I have, which I consider finer than *F. grande*, and of equally as good growth. These leaves were cut from a large specimen in a 12-inch pot. The markings of white, cream, and pink are very beautiful and distinct, no two leaves being alike; some are all white, some half white and green, others green and white stripe. I should like to know the name."

[The inquiry in the August number had reference to species of *Farfugium*. The leaves sent are still but a variety of *F. grande*, but yet are, from a horticultural point of view, very distinct from the old form. Instead of merely spotted as that one is, these are full striped, or as the gardener would say, variegated.—Ed. G. M.]

A ROSE THAT WILL NOT FLOWER.—"J. H.," Ardmore, Pa., writes: "I have had a *Reina Maria Henrietta* growing upon a rafter in my greenhouse for three years and it has not yet bloomed. I pruned it the first year, and the second year I did not prune it at all—at the present time it covers a space twenty feet long on one side of the greenhouse from the ridge half way down the side and it is sending up six shoots about an inch in circumference. I would be obliged to you, or would be glad to have some of your readers suggest some mode of treatment that would cause it to bloom."

[No one can do more than guess at the stubbornness of this rose, except on general principles. One would have to see in order to give special advice. In a general way, a rose only flowers freely when it has an abundance of direct sunlight. A house shaded by numerous thick heavy rafters, or one that has numerous dirty "laps" to the panes of glass, or one with a flattish roof that permits only the direct sun's rays at mid-day, these or other similar conditions would operate against a free flowering.

Or there may be a too free vigor of growth from some cause, and this would be against a floriferous condition.—Ed. G. M.]

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

The people who garden simply to get something to eat, in most cases will do better by buying what

and orchards from the pleasure which gardening affords, quite as much as from the mere amount of "truck" the ground produces. Hence, the Seasonable Hints we give have quite as much to do



Rivers' Early Prolific Cherry

they want from some pedlar, in market, or some with questions of superiority in fruits and vegetable place; but most of our readers have gardens, as with the exact market value thereof,

But we are not so sure that those who take pleasure in superiority, are not also the ones who make the most money, for there is always a good demand for superior articles, no matter how much the market may be glutted with poor fruit. We make these remarks now, because, when in a past year we recommended that an orchard of apple or other fruit trees should have a good dressing of manure at this season, especially if the orchard be in grass, it was objected in one quarter that a poor farmer could not afford to manure an orchard. But there can be no question but that to lead to the best success with fruits, the land must be either naturally rich, or it must have some artificial fertilizing in some manner. As we frequently note, in some parts of the world, where even the climate is just suited to a given fruit, yet those who would excel will take great pains with their culture.

The cherry is an illustration. The English climate is nicely suited to the cherry; yet houses are often built in which to grow them, solely because they are so much finer and better than in the open air. Annexed we give an illustration from the *Journal of Horticulture*, of a plant of Rivers' Early Prolific, grown in the cherry house of Mr. Rivers, and grown in a large pot at that, which will give some idea of what we mean.

Suppose we could get all the cherries we wanted to eat, for a quarter, who would not give a half-dollar for a bunch like these?

Art can beat Nature every time; but only those who take pleasure in the art can do it.

COMMUNICATIONS.

WESTERN PENNSYLVANIA NOTES ON FRUITS.

BY A. H.

With the exception of peaches which were an entire failure, and some occasional apple orchards, the fruit season here has been a very favorable one both in respect to quantity and quality. In June and July our Meadville market was fairly flooded with strawberries, first from the far south, and then from home gardens until the price got down to four and five cents per quart. Primos and Manchesters, that would once have astonished the world, had to compete with several novelties equally large and attractive, lately introduced.

Apples, less injured by the codling moth than usual, have also been very abundant, driving the market price down from forty cents a bushel to

twenty-five. An apple some years ago that measured twelve inches in circumference, would probably be characterized as being "some pumpkins;" some brought to market here this year must have exceeded this by two or three inches. Both our farmers and our gardeners deserve great credit for their enterprise in keeping even with the times.

Our orchardists are, however, chargeable with the very common fault of permitting their trees to be injured by over-production.

I thought I was thorough enough this year when I cut out over twelve hundred pears from a Seckel tree in my garden to lighten the crop, but I found seventeen hundred and fifty pears on it when the fruit was mature enough to gather in the latter part of August. It is questionable if this pear, though embraced among the early kinds which are best ripened in the house, is not frequently gathered sooner than it should be.

Sheldon, Lawrence, and Winter Nelis, all have done finely with me this year, and Dana's Hovey is larger and better than ever before. I consider it superior in quality to the Seckel.

I have been disappointed in one pear, the Leconte. A friend gave me some grafts three years ago which made a splendid growth, and the fruit seemed very promising. It was long and smooth, shaped somewhat like a musk-melon, and left on the tree until the leaves ripened and the fruit came off easily. It soon assumed a lemon color, and looked finely, but when opened most of the specimens were discolored and decayed, and when not so, unfit to be eaten. Possibly in another climate on a different soil they may be much better. It ripens south in summer, here in October.

I think there is no department of fruit, in which the public has been more humbugged than in grapes. I have tried some fifteen or twenty varieties, and rejected them one after the other; and it makes one smile to look over old catalogues and see the eulogiums bestowed upon them when they were first brought out.

The Delaware holds its position well, but some of the bunches are the better for having the berries thinned out. Tallman and Red Wyoming are vigorous growers, and ripen their fruit early, but when ripe it is only fit for making jelly. Brighton does not set its fruit well, is more palatable than the last two, but soon spoils. Catawissa grows strongly, produces large bunches of good sized berries with a rich bloom on them, but it does not fertilize perfectly, and lacks some qualities to fit it for a table grape. Under glass Muscat of Alexandria

has ripened fully this year with me without fire heat.

I wish some of your correspondents would give some efficient remedy for thrip. One cannot use burning sulphur on account of the foliage. Tobacco smoke taints the fruit. I thought I had nearly gotten rid of them last year, but this season they came back in full force, entering I think through the wire screens of the windows. Burning paper saturated with kerosene in a wire cup attached to a long handle, and passing it rapidly over the vines, avoiding the fruit, does very little injury to the foliage, and destroys many of the insects; and they can be reached to still greater advantage on a warm day when they congregate at the apex of the vinery to enjoy the heat. But what the amateur cultivator wants is something that does no injury to man, foliage, or fruit, but will fully and successfully banish or destroy the insects.

I have, at writing, got all my out-door vines trimmed to red wood; laid down and covered with leaves for the winter, and advise all of your northern readers to do the same.

Meadville, Pa., Nov. 2nd, 1885.

EDITORIAL NOTES.

STRAWBERRIES IN BUCKETS.—The *New Haven News* says:

"Portable strawberry beds are the latest in the long list of inventions of the nineteenth century, and in a few years every citizen who has a little patch of garden, or a sunny spot on the roof of his house, can raise strawberries all the year round. These beds have three or four advantages over the old-fashioned style, which cannot be over-estimated. All the disadvantages of wind, rain and drought are done away with. Between Branford and Guilford is a back road that is little travelled, and on one of the loneliest, rockiest, and most generally forlorn clearings lives the man who is destined to revolutionize the market gardening of the future. He is an aged negro rejoicing in the appellation of Cæsar Johnson. A reporter, with a taste for the wild and beautiful in nature, and who had saved up three months' salary and hired a team and taken a friend to ride, chanced to drive past the habitation of Cæsar, a day or two ago, and was surprised to see the old man sitting in front of his house, regarding, with an air of pride, three or four fine specimens of strawberries.

"'Where in the world did you get those?' he asked, as he drew up his animated quadruped, and forgot all about his companion and the fact that horse hire goes by the hour.

"'I grewed 'em,' said Cæsar, as he calmly devoured a berry that would bring 25 cents in the New York market.

"'You grew them? How?'

"'Yes, sar, I done grewed them in buckets. You jess come and see.'

"The reporter followed, and sure enough back of the hovel, on a bench, stood twenty pails, each with a flourishing strawberry plant. Some of the plants were covered with blossoms, and on the others the deep and delicately greenish white of the ripe and unripe fruit, peeped from under luxuriant leaves.

"'You see dem pails is mighty handy to take round,' explained Cæsar as he held one up in each hand for the news gatherer's inspection. 'I done made a lot of them pails, and fill 'em up wid de blackest kind of wood dirt. Den once a week I cuts a runner off an old plant, and puts it in a fresh pail, and that way I keeps a fresh stock. Dese old plants can stand de cold, so I leabs dem out, until late in the afternoon, but the young 'uns, dey looks kinder peaked if I lets dem be out, except in de middle ob de day.'

"The roof of the house was mostly composed of old sashes neatly glazed, and in the centre of the garret floor stood an old wood stove, which kept the temperature at summer heat. There were more pails, each containing plants of different ages which Cæsar explained would bear all winter if he did not forget and let the fire go out."

MEECH'S PROLIFIC QUINCE.—It has become the fashion of late years for some one who knows to see nothing but old kinds of fruits in popular new varieties. Out of so many old forms disappearing, it would be remarkable if some of the seedlings did not occasionally resemble some of the original kinds. Indeed we are confident that there is often no difference between new forms and kinds popular a quarter of a century or more ago. But what signifies this? If the old ones get enervated, subject to disease, and dwindle out generally, a seedling with health is desirable, even though the old form should be exactly reproduced. We would give a great deal if some one would give us a seedling of the old Butter pear or White Doyenne, which would not crack, even though every lineament of the parent were reproduced. Meech's Quince is going through this ordeal, some good judges seeing no difference between fruit of this and the Champion. This may all be, and yet the new introduction be a very desirable kind. The proper place to decide the value of a new introduction should be in the field among the growing plants, and in comparison with the kinds it is believed to resemble growing near it, rather than by a plate of fruit at a country fair.

MINER'S PROLIFIC STRAWBERRY—has been found at the Agricultural College of Michigan, a wonderful berry as grown here on rich soil and with good culture; productive, large, firm, quality good. It equaled the Sharpless in size. During

the first two or three pickings the berries had green tips similar to the Bidwell, but these colored up well as the main pickings began.

CHERRY, MOLMANNE DUKE.—The *Revue Horticole* considers this a valuable late cherry, ripening after Belle de Choisey. In France they have had the fruit till the 15th of September.

THE JESSICA GRAPE.—This Canadian seedling was noted in our columns last year, and is said to have given great satisfaction in Canada last year.

AMERICAN GRAPE IN EUROPE.—The plantations of American Phylloxera-proof grapes in Europe are getting to be enormous. We learn by an Italian journal that at Sassara, in Italy, 20,000 were set out in one spot.

THE INDUSTRY GOOSEBERRY.—In the old world where time is of less consequence than here, this goes by the name of Wyndham's Industry, and some pomologists are inclined to bastinado Americans for changing the name to disguise its English origin. Not at all, but we cannot tolerate a long name.

THE FLORENCE CHERRY.—The *Gardening World* figures this old European variety, and wonders that it is not more known. It is given as forming a bunch of fruit over five inches wide, and with 21 cherries on the face view side of the bunch. Certainly if this is a fair sample of its average condition, it ought to be in American collections as well as more freely in those of Europe.

THE CUMBERLAND STRAWBERRY.—Mr. D. M. Dunning, after a good look through Rochester, regards the Cumberland as possessing the most desirable qualities for all purposes in that section.

We may here note, as an awful warning to those who will give fruits and flowers long and unwieldy names, that this variety was originally named Cumberland Triumph, but the great public has cut it down one-half.

THE JONES PEAR.—How long it takes for a good thing to get well known is illustrated by the Jones pear. Here is a variety that is full worthy to rank among winter pears as the Seckel does among autumn kind, and yet its name does not appear in any shape on the lists of the American Pomological Society.

CAULIFLOWER, CHALON PERFECTION.—Those who love pretty vegetables as well as handsome flowers regard this as a great advance in beauty over older kinds. The surface is as white as snow, and almost as smooth as ivory. The prac-

tical man loves it because it is said to make good heads in soil but of moderate fertility.

A NEW BULL-NOSE PEPPER.—It is said that a new giant has been produced in the old world that has a fruit 7 to 8 inches long, and 4 to 5 inches broad. Good news for the lovers of pepper sauce.

THE SALAMANDER LETTUCE.—This variety is said to head under warm weather very well, when other varieties are disposed to run to seed.

SCRAPS AND QUERIES.

FRUIT ROOMS.—"E. W. W." of Yantic, Conn., writes: "I have been unable to find any published article on 'Fruit Rooms,' and the generally accepted plan for preserving pears and grapes into the late fall or even winter. Such an article with full directions for building would, I believe, be appreciated."

It has been found of little use to offer to others exact plans of fruit rooms suitable to any one person's wants, and hence it is not attempted in books and seldom in periodicals in recent times, but there are certain general principles of use to everybody, which it may be of service to give here.

Fruit houses are for preserving apples, pears or grapes, but chiefly the two former, and especially the first. The conditions for perfect success vary somewhat in each case, and hence if one would be perfect, he should have a separate house for each class. If one be a fruit grower on a large scale he would certainly do this, but in a general way when we are asked how best to build a fruit house, it is taken for granted that the inquirer is an amateur, who wants a house suited to the wants of his family, and in which the products of his garden and orchard can be preserved as long as possible, and be within reach whenever wanted. It must be a sort of omnibus, capable of containing all his fruit of whatever kind.

Now the enemies of the fruit-keeper are, heat, moisture, and frost. The fruit room must not go below the freezing point, nor must the temperature go much higher, the aim being to keep it below 45° if possible. No condensation of moisture must take place within the building, and there must be means provided for ventilation, that is, to let out the superabundant moisture that may evaporate from the fruit, or admit colder air should the temperature get too dry. The apple will bear more moisture than the grape, and the grape than the pear. Some fruit-keepers think darkness fav-

orable to the preservation of fruit, but we have not noticed any disadvantage in light, and should certainly have light enough to see everything clearly in the room.

In order to be safe from frost, some have arrangements for a little artificial heat in very severe weather, but to our mind it is better without. It is very difficult to know just what the low temperature may be, and we may sometimes have the heat too high, or the temperature get too low. This will be liable to occur, if even the owner himself take in hand to watch the thermometer, and much more likely if the matter is left to the discretion of some employee. To make absolutely safe against frost, it was at one time the fashion to build the fruit room in part or wholly below ground; but they so often became too damp and too warm, that few do this now, though we do not know why it might not be made proof against these dangers, if some judgment were displayed in the construction. The most approved method is to have the building wholly above ground, and to have double or treble walls. In climates where the temperature does not go much below zero, a well-constructed double wall, with double doors and double window sash, would be quite safe. For greater security, supposing the walls to be wood, the inside faces of the double wall should be lined with felt. The roof also must be double, with a provision for a ventilator, if it should be found necessary to use one. This, however, may not be required, if windows are so arranged that there can be a current of air passed through now and then. Air, however, should not be given, except when the temperature outside equals that within, or there will be a troublesome condensation of moisture, which is what we try to avoid. The interior should be a mass of shelves on which the fruit is to be spread, and so arranged as to be easy of access to observe and to handle the fruit. The fruit may be several courses thick on the shelves, even heaped without injury, provided we secure the best conditions for preserving them. Hay may be placed over the fruit if there is danger of frost penetrating; but this should be avoided if possible, because a fruit house should be a show house equal to a greenhouse of pretty flowers; and there is no more beautiful sight in the world, to which to invite a friend, than a well-ordered fruit house, with every one of the varieties on its own separate shelf, and presenting to the beholder the most glorious reasons for its existence.

Of course, if the full measure of pleasure in fruit

growing is not desired; if we feel on a level with the beast that perisheth, and only want to lay up something to eat, in as cheap and secure a way as possible, the fruit may be carefully selected to see that no "specked" ones are included, packed in barrels and "stowed away anywhere in a cool place secure from frost," as the books have it.

We have given here a sketch of such a fruit house as we have in our mind, though seen some years since. Some of our readers may know of something that would give some additional suggestion for which we should be glad to make room.

A fruit house for preserving fruits on a large scale by those who want to grow for market might also be desirable to many, and though these must be based on the principles we have laid down, there must be later modifications in some fruit centers of which it would be very interesting to know.

A PROMISING SEEDLING PEACH.—A Richmond, Va., correspondent says: "Noticing your remarks on Mr. Shearer's 'Globe' peach, has inspired me to mention a seedling that I have, which might be judged by those capable of knowing, far superior to the Globe. The description answers very well for mine, except as to the size and weight. Among the finest fruit gathered this season, which is its second fruiting year, the tree being four years old, were some which measured eleven and three-quarter inches in circumference, and weighed ten and a half ounces; with the balance of the crop correspondingly large. It has a most delicious flavor, and is looked upon by my neighbors as something of the extraordinary in size and beauty. Unfortunately I have no fruit left to send you. It ripens about the first of October. It has caused considerable interest among some of our nurserymen; but being only a florist and not knowing its probable value as yet, I have kept it out of their hands until I can learn more about it. I would be glad to hear through the columns of the MONTHLY, if, from what I have written, you think it is a new variety, and if likely to be a good one."

[Seedling peaches are so numerous that it requires something more than "very good" to make a new introduction popular. For a market peach, one that will not easily decay by bad usage is a good point, and there are many others that can only be judged of by one actually growing the tree, and comparing with other kinds growing in the same vicinity. So far as it is possible to judge from a mere description, the peach of our correspondent seems of value.—Ed. G. M.]

FORESTRY.

COMMUNICATIONS.

TEA CULTURE IN THE SOUTH.

BY MRS. D. WALKER.

In one of last year's numbers of the *GARDENERS' MONTHLY*, I gave an account of the success of our tea plants, which this autumn are profusely covered with bloom and buds. The bushes have much increased in diameter, are perfectly healthy, strong and vigorous, with dark heavy foliage. They seem impervious to drought and floods, and vie with our native evergreens in beautifying the garden.

Now, about planting the seeds collected last year from our own bushes. The ground where they were to be planted was thoroughly mulched, the soil naturally being very sandy. The seeds were dropped on the ground and left uncovered. No further care was given, the weeds for the whole of the past season not being removed.

At this time, there are a hundred or more fine thrifty plants covering the spot; proving, indisputably, that tea can be grown in this State, and surely such an industry should not be overlooked. What difficulty could there be in importing some Chinese who are accustomed to the manipulation of the leaves; and, in short, understand the proper process of preparing the tea for market?

Assam and other East Indian teas are largely imported into Europe, and commonly drunk. There can be no doubt as to their excellent flavor. While in England this summer, I drank Assam tea every day, and thought it much superior to our ordinary black tea, for which we pay (retail) \$1.10 per pound.

Another fact is worth reporting. In England, the duty on tea is twelve cents a pound; here there is no duty, and good tea is far more expensive than abroad.

Summerville, Charleston, S. C., Nov. 8th, 1885.

[This note is very acceptable as keeping before the community a topic it is apt to forget. There is no reason for doubt that the tea plant will grow as well, and produce as good tea in portions of the Southern sea-board States, as in China. The whole question is reduced to one of cost of production. The introduction of Chinese labor would not help the question in the least. All experience

has shown that every new locality must be a law unto itself. In the early history of vine-growing in America, it was thought essential to import vine dressers from the vineyards of Europe. Their art was of no value here, and vine-growing was not a success until we cut loose wholly from the experiences of the old world. The most successful vineyardists of to-day never saw the old world. And this must be true of tea culture. When some enterprising young man shall take hold of the tea question, note well just where its weaknesses are, and go resolutely to work to strengthen these points, tea culture will be one of the most profitable industries of the South. And that person and that time will surely come,—Ed. G. M.]

THE SO-CALLED HARDY CATALPA.

BY T. T. LYON.

Under the above heading, the *MONTHLY*, in the number for December, at page 371, refers to a Bulletin (No. 7) of the Agricultural College of Michigan, which alleges that Catalpas, *bignonioides* and *speciosa*, and also *Teas'* hybrid, are tender in Michigan; and that the two former are about equally hardy. I will not undertake to question the statement, so far as their hardness at so unfavorable a locality as the College Farm is concerned, farther than to say, that this is the only locality in southern Michigan, from which we have heard a complaint that *C. speciosa* is not entirely hardy.

Forty years ago we planted and grew *C. bignonioides* for many years in eastern Michigan; and very rarely succeeded in carrying it through the winter unharmed; and others in that region on various soils, experienced the same difficulty. There are now standing in the streets of this village, within half a mile of Lake Michigan, in a vicinity where the peach is a staple orchard fruit, several trees of *C. bignonioides*, in a sadly diseased condition, obviously from the effect of our winters. On the other hand, we have, for the same forty years, known a tree of *C. speciosa*, which, the last time we saw it, (three years since,) was in perfect health. We have also, for seven years past, grown both *speciosa* and *Teas'* Hybrid, and planted them here, in western Michigan, as roadside and yard trees, as well as in nursery;

and we have very rarely, if ever, observed any injury whatever to either, attributable to the cold of our winters. In fact a hundred or two of *speciosa* and *Teas'* Hybrid, of two-year seedlings, stood through the unusually severe and continuous cold of last winter, in nursery rows, in a very bleak exposure, uninjured; and have made a vigorous, healthy growth this past summer. Roadside trees of *speciosa*, three to five years planted, have done equally well, showing no injury whatever. *Plymouth, Mich.*

LARGE SASSAFRAS TREES.

BY DR. GORDON W. RUSSELL.

Some time since, Dr. G. L. Porter, of Bridgeport, informed me of a large tree of this species growing in the vicinity of that city. I have not seen this myself, but he visited and has kindly sent me the location and measurements of the two trees, which, with his letter, are as follows:

"BRIDGEPORT, May 29th, 1885.

"Dear Dr.—By this mail I send a small box, containing some buds on the terminal branches of the large sassafras tree; the root and bunch of undeveloped blossoms and leaves are from large bushes at its foot. The tree itself is not yet in leaf. To-day we have seen a dozen or more similar trees, but not as large as the tree of which I will make subsequent mention.

"On the main road, over Holland Heights, two and a half miles west of Bridgeport, on the south side, half way up the hill, is a sassafras tree. Four feet above ground its circumference is seventy-eight (78) inches; the spread of its branches is thirty (30) feet, and its height is about fifty-five (55) feet.

"About one mile northwest (and two miles northwest of Black Rock), at the junction of Black Rock turnpike and a cross road, on the land of Andrew Nelson, Esq., is a similar tree, but of larger size. It stands upon a hill-side, and is included in a stone wall. Upon the lower or west side, seven feet from the ground, and upon the upper or eastern side, four feet from the ground, the circumference is one hundred and ten (110) inches; the spread of branches is fifty-six (56) feet, and the height fifty-five (55) feet."

To most persons who consider the sassafras as only a short or small tree, these dimensions are wonderful, and probably are not exceeded by any other specimens in the State. The largest of which I have any knowledge, is standing in the grounds of the Retreat for the Insane, in this city. This is sixty-nine (69) inches in circumference at three feet from the ground, and is about forty (40) feet in height. It was probably planted, with many other of the fine trees on the grounds, soon

after the establishment of the institution, a little more than half a century since.

But I find, upon investigation, that the sassafras attains occasionally a very large growth. Michaux says, that while in the northern latitudes "it is only a tall shrub, rarely exceeding fifteen or twenty feet in height, yet, in the neighborhood of New York and Philadelphia, it grows to the height of forty or fifty feet, and attains a still loftier stature in some parts of Virginia, the Carolinas, and the Floridas, as well as in the Western States, and in upper and lower Louisiana." Dr. Jacob Bigelow says that it "arrives in favorable situations, to a tall stature, and large circumference." Emerson states that in Massachusetts, "the sassafras rarely reaches thirty feet in height and a foot in diameter. I have, however, measured some which were forty or fifty feet high, and nearly two feet in diameter. One was growing in 1842, in West Cambridge, which measured more than three feet through at the base, and rose without a limb more than thirty feet, with a trunk very straight and slightly diminished, above which it had a somewhat lofty and broad head. It was nearly sixty feet high, and had been growing by itself. It was felled and its roots dug up, to allow a stone wall to run in a right line. Such pieces of barbarism are still but too common. A tree so beautiful and lofty, and of such rare dimensions, such an ornament to a bare hillside, sacrificed to the straightness of a wall!" There are doubtless many other large and beautiful trees in this State which are annually sacrificed for as slight reasons as the above.

It was stated in a newspaper item last year, that there was growing in the northern part of Georgia, a sassafras tree which was now twenty feet in circumference, but I have not been able to discover any authority for it.

I should be glad to receive accounts of any large or remarkable trees to be found in this State.

Hartford, Conn.

[These are fine trees for so far north. The Editor has no note of the largest trees he has seen near Philadelphia, but is sure some must have been nine feet round.—Ed. G. M.]

EDITORIAL NOTES.

THE HARDY AND THE TENDER CATALPAS.—Prof. Baily is catching it all round for his report on the hardiness of the two Catalpas, and it is even asserted that his plants are all of the one

kind—*C. speciosa*. However, the trouble all arises from the effort of some Western men who were eager to make out that *C. bignonioides*, which stands in the Eastern States a temperature of many degrees below zero, is a "tender" tree.

There is no doubt, we think, that when such experienced foresters as Mr. Douglas tell us the *C. speciosa* is harder in some special localities and a better forest tree than *C. bignonioides* for Western planting, that these are facts. All the trouble comes from a trade effort to belittle the Eastern species, for which there was no occasion. It is a case of one's own chickens coming home to roost.

THE YELLOW LOCUST.—This is called false Acacia in Europe. A correspondent of the *Garden* wonders why the "rage" for planting this in Europe, so prevalent some years ago, has died out in the old world. In our country it is found use-

less for any work where nailing is required. It will not hold nails. It has no elasticity. It is good for posts that are simply bored to hold the rails. That is all.

FOREST DESTRUCTION.—Fire is a great destroyer in America, but storms of wind and rain are forest enemies in other parts of the world. In the immense plantations at Drumlanrig in Scotland, a tract containing 300,000 trees was destroyed two years ago. It is reported that it will take years to clear the ground of the dead trees.

TIMBER OF AUSTRIAN PINE.—The *Garden* says that the timber of Austrian Pine is preferred to Scotch Pine, by Austrian woodmen. It is a rapid grower, and thrives at lower elevations than the Scotch.

THE TURKEY OAK.—The timber of this species is regarded as nearly valueless in Europe.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

AMARYLLIS TREATÆ.

BY MRS. FANNY E. BRIGGS.

Who has *Amaryllis Treatæ*?

In looking over the numbers of *Harper's Monthly* for 1877, I chanced upon what seemed to be Mrs. Treat's original description of the *Amaryllis* that bears her name. After describing her manner of exploring secluded nooks along the banks of streams, and mentioning several plants observed, she says:

"But my delight culminated in finding a beautiful *Amaryllis* lily growing amid the dense thicket in the soft, mucky soil along the banks of the stream. The leaf is much broader and longer than the old form of *A. Atamasco*, L. and the flower finer and larger, and blooms some two months earlier. Some of the largest leaves measure two feet in length, and the largest flowers five inches across, and five inches in length. It commences to bloom in January, and continues in flower till March. It bears transplanting to common garden soil, where it does not depreciate in size of leaf or flower.

"Last year I sent some three hundred bulbs to the Botanic garden at Harvard to have it tested,

and the director writes me under date of February 2, 1877: 'Your *Atamasco* lily is a splendid thing, much finer than the old form, and is now charmingly in flower, and very beautiful.'"

It will be seen at once that this description differs from that given in the June number of *GARDENERS' MONTHLY*, and from that of the dealers who offer the bulbs for sale, especially as to the rush-like leaves. I enclose an illustration that differs also from that which appears in the florists' catalogues. The flower stem is short, rising only as high as the curve of the long, strong-growing leaves, and the flower differs in shape; the lower part seeming almost cylindrical, the upper spreading quite abruptly.

My limited personal knowledge is this: I have grown the pink *Atamasco* many years, and flowered bulbs of *A. Treatæ* received from an eastern dealer, three years, the flowers differing from the pink in no point excepting color. The foliage being scanty and small as shown in catalogues.

[Mrs. Briggs does well by calling attention to this plant, for we ourselves begin to feel confused as to the differences; and it may lead to a better diagnosis by some botanist more familiar with the plants. We append herewith all that is said of each in the last edition of *Flora of the Southern*

States. One certainly cannot tell from these descriptions which is which, and in several points Chapman's description is actually discordant with Mrs. Treat's account of the plant.

"*Amaryllis* (*Zephyranthes*) *Treatæ*, Watson. Bulb small, leaves very narrow (a line to a line and a half wide), thick, semi-terete with rounded margins, not shining; scape four to twelve inches high; flowers three inches long, white, the segments rather obtuse; capsule broader than long, its peduncle three to nine lines long. Low ground, east Florida, (Mrs. Mary Treat,) April and May.

"*Amaryllis* *Atamasco*, L. (*Atamasco* lily). Scape terete, somewhat lateral, one flowered; leaves linear, concave, fleshy; spathe one leaved, two-cleft; perianth short stalked, bell-shaped, white tinged with purple; style longer than the stamens; seeds angled. Rich damp soil; Florida, and northward; March and April. Scape six to twelve inches high, commonly shorter than the glossy leaves. Flower two to three inches long."—Ed. G. M.]

EDITORIAL NOTES.

THE MISSOURI BOTANICAL GARDENS.—The eminently public spirited citizen of St. Louis, Mr. Henry Shaw, who proposes to give his celebrated Gardens to the city on his decease, for the enjoyment and instruction of the people for ever, has not waited for the event of his departure—which all hope may be long postponed—to inaugurate his generous gift. He has already founded a school of Botany, endowing it with real estate which even now produces an income of over \$5,000 a year. Prof. Wm. Trelease, an eminent botanist among the younger class of men, has been placed in charge, and inaugurated on the 6th of November. It has been made a department of Washington University. The whole movement so far seems to indicate a bright future, and must be highly gratifying to Mr. Shaw, the generous promoter of the measure. The Engelmann Herbarium, and other famous material will, it is hoped, go to the charge of this new department of the University.

AMARYLLIS OR ZEPHYRANTHES CANDIDA.—When making the note on this subject for our last, we were under the impression that this name was given to the white form of the red *Atamasco* Lily, but Mr. Sereno Watson calls our attention to the fact that there is a very different species in South

America under this name, and this may be the one under culture in English gardens. There still seems a need for some distinctive name for this form. White *Atamasco* Lily will not do, as the species named for Mrs. Treat is white also.

THE MONTREAL BOTANIC GARDEN.—A garden has been agitated since 1863. Since Prof. Penhallow has been Professor of Botany in the University, the project has taken shape, and seems now entirely successful. It embraces 77 acres; the arboretum takes of this 40 acres, 5 acres will go for aquatics and similar plants. The plant houses are to cover 216 feet by 90. There will also be lecture rooms, library, and an economic museum. The city furnishes the ground, leases it to the Garden Association, and the citizens find the money. The Horticultural Society is its chief supporter. The Dominion Government, however, appropriated \$1,000,000 to put the garden in a good preliminary condition. The prospects at present indicate that this garden will be one of the most successful on this continent.

THE MISTLETOE IN DIFFERENT LOCALITIES.—The following notes from various correspondents, show the trees which the mistletoe seems to favor in different localities. We should be glad to have information from other localities. It seems pretty clear that a tree that may be a favorite in one locality, may not be in another; and the reason for this may be discovered when we get a good list of facts.

Mr. C. A. Oelschig—"About the mistletoe question would say, that the parasite is found in and around Savannah in abundance on oaks, especially on Water oaks. Last winter I found mistletoe growing on a pear tree, and a few days ago I was surprised to find one growing on an *Olea fragrans*, which grows in one of the private gardens in our city."

S. T. Walker—"In reply to 'Student's' inquiry, as to the mistletoe growing on the oak, will say that in Oregon it is about the only one it does grow on. In fact, I do not recollect having ever seen it on any other tree. It is, however, more plentiful in some places than others. I am told that in one place a mile or so from here, where it used to be abundant, it has disappeared."

"A. M.," Pittsburg, Pa.—"Away back in January, 1863, after participating in the battle of Fredericksburg and Burnside's 'Mud March,' the writer, along with the rest of the old Pennsylvania Reserves, went into camp at Belle Plains (about midway between the Potomac and Rappahannock

Rivers), and there found his first specimen of mistletoe. It grew on a Red oak, and he must confess, that it was one Sunday morning that he cut down the tree to get it. He afterwards saw numbers of them through the same section, and all on oaks."

Mr. D. H. Watson notes that in Texas, the mistletoe apparently has no choice, as it is found on almost every kind of tree. It is in Western Texas that it is found so abundant on the Mezquite, and hackberry, which, we suppose, in that part refers to *Celtis occidentalis*—the sugar-berry or nettle tree of further north.

Mr. F. L. Bassett, Hammonton, N. J.—"In regard to the host plant of the mistletoe, I would say that I know of one instance of its growing on the Red maple. In all other cases, it has been found on the sour gum or *Nyssa multiflora*."

[This note is interesting from the fact that the oak is abundant in the same locality, but here it seems not to be in favor with the mistletoe. Why? —Ed. G. M.]

THE CURL IN THE PEACH.—Recently we stated that the balloon or bag plum came of the attack of the same fungus that produces the curl in the leaf. This, Mr. Worthington G. Smith, a noted English mycologist disputes. He says the curl comes from an attack by the *Ascomyces deformans* as we have already stated; but that the baggy plums are caused by *Ascomyces Pruni*; another species,—*A. bullatus*, produces the blister in the pear.

THE DISCHARGE OF RIVERS.—The amount of rainfall over the catchment, or supply area of the Delaware River, is 34,000,000 tons; but the amount that gets to the ocean is but 43 per cent. of this, leaving 57 per cent. for evaporation and waste.

CATTLE POISONING BY EUPATORIUM AGERATOIDES.—A travelling newspaper paragraph says that a horse disease "known as trembles," was recently brought on "in Ohio" by colts eating this plant. As *Eupatorium purpureum*, the "Joe Pye weed," is eaten by cattle in these parts without injury, and the common "Bone-set," *Eupatorium perfoliatum*, is used as a tea in some cases by human beings, though refused as food by cattle from its bitterness only, it will be well to postpone giving the pretty *Eupatorium ageratoides* a bad name, till further evidence be offered.

FAIRY RINGS.—In the old world it is not uncommon to see circles of grass two or three feet in diameter, in pastures, with the grass wholly dead inside the circle. The children were taught—

as in old times they loved to talk childish things to little children—that the grass was killed by the feet of the fairies who danced all night over these grassy floors. The appearances are now always known as fairy rings. We have never known the grass wholly killed in this country, but it is not uncommon to see circles of grass several feet in diameter where the grass is of a darker green than the rest. This appearance can indeed be often seen on lawns in early spring when the growth first takes place. Mr. Worthington G. Smith, a well known English authority on matters connected with fungus growths, gives the following note to the *Garden* in relation to the subject in answer to a correspondent:

"These are caused by the growth of fungi, notably by an edible species known as the Fairy Ring Champignon. The underground spawn from which the fungi arise at first starts from a centre, so that by the radial growth of the spawn the rings increase in size every year. The growth of the thick, black grass here mentioned is caused by the decay of the previous year's growth of fungi on the margin of the ring. These fungi form a highly nitrogenous manure. The new crop of fungi (generally to be seen in the autumn) is outside the dark, rank grass; this crop causes the growth of the dark-colored grass in the following year. The ring of black grass is stated here to be sweet; Shakespeare says it is sour:

"The nimble elves
That do, by moonshine green, sour ringlets make,
Whereof the ewe bites not.

"By further observation you will find that Shakespeare was quite right; herds and flocks do not relish the rank, sour grasses of Fairy Rings, and will not eat them."

FIRE BLIGHT IN THE PEAR.—The December *American Naturalist* has a paper by Prof. J. C. Arthur, which is one of the most satisfactory we have read for a long time, and is well worthy of perusal by those interested in intelligent pomology. It is long since the *GARDENERS' MONTHLY* took the stand that fire blight must of necessity be of fungus origin, because it was not possible to introduce any supposition on the other grounds of climate, soil, modes of culture, &c., without the proposition carrying with it its own refutation. It was evident that the cause, whatever it might be, was local, and therefore induced by some special influence operating on particular parts of a tree, wholly independent of the plant itself. In other words, some parasitic action must be the acting power in inducing fire blight. Though predisposed this way, we have not hesitated to criticise theories offered in its defence, because we think nothing should be accepted as science, that will not bear every attack. Professor Burrill's

proposition that the disease was caused by the presence of Bacteria, was fully in accord with our prepossessions; still we have not hesitated to point out occasionally, weak points; and quite recently, in noticing another paper by Prof. Arthur, we had occasion to observe that there was still left a doubt, whether what was generally known as fire blight, was the disease Prof. Arthur had in his mind. In this paper he has made it clear, that it is the genuine fire blight with which he has been experimenting, though it is also clear that some diseases, or perhaps forms of the real disease, but not the genuine article, are sometimes confused. There is still one point which the Professor does not seem to have observed, and which we think very important to a correct diagnosis of the case, and that is, that the part attacked is really but a very small portion of the branch—an inch or two in most cases—and the rest of the branch is, as he states, killed simply through the destruction in the ascent of the sap. Usually the ringing of a branch, by which the sap would be obstructed, would not result in an immediate blackening of the leaves; they would gradually wither, and finally die away brown instead of black; and this reflection would indicate that there is yet something more than a mere cutting off of the sap supply. Still, the candid reader will have to admit, that the results of Professor Arthur leave but little doubt that a species of *Micrococcus*, allied to Bacteria, is at the bottom of all the trouble. It is only its "ways and means" that are yet to be found out.

MALE AND FEMALE FLOWERS ON THE GINGKO.

—The tree of *Salisburia adiantifolia*, the Maiden Hair or Ginkgo tree, which has fruited on the grounds of Charles Wister, in Germantown, the past few years, has been carefully watched this year, without discovering any male catkins, and it is still a question how the female flowers get fertilized. There is a tree wholly male, profusely bearing catkins, on the grounds of Mr. John Haines, half a mile east; but it seems scarcely credible that the wind should always blow exactly from the east, to carry this pollen to the Wister tree at just this time every year. There is yet something to learn, evidently, about the behavior of this singular Japan tree. Like all the yew family to which it belongs, some trees are wholly male, some wholly female, and others with both sexes on the one plant.

PLANT LIFE IN THE ARCTICS.—During this short summer, the plant life of the Arctics grows very rapidly under the constant stimulus of an

ever-shining sun; and before the snow is off the ground, flowers will be in bloom so near the banks of snow that, with the foot, they may be bent over against them. The vitality in these hardy Arctic plants appears phenomenal, and they almost seem endowed with intelligence in knowing what a brief time they are allowed to spring up, blossom and bear seed. They commence early, and hold tenaciously on to all their growth after plants which we are used to seeing, would be prone upon the ground. Middendorf has seen an Arctic rhododendron in Siberia, in full flower all over it, when the roots and the stem were solidly encased in frozen soil as hard as ice. On King William's Land, we had four nights in July and thirteen in August, when the thermometer sank to freezing; and yet I picked flowers in bloom, to within the last three days of the latter month.—*Lieut. Schwatka, in Independent.*

HYBRIDIZING INDIAN CORN AND SORGHUM.—A correspondent sends us the following as remarkable. It is from a communication by Dr. E. Bonavia, of Etawah, East Indies, to the *London Gardeners' Chronicle*, page 736 of last year:

"In the same year I obtained a few seeds of the Cuzco Maize of the Andes—a large white variety. I managed to obtain a cross between this and the native Maize—a very small grained yellow variety. The result of the first crossed seed was encouraging. It produced a Maize of large size, of a light yellow color. Further experiments with it produced curious varieties. Some plants threw out branches where the ears or cobs should have formed; others, among the head of male flowers, on the summit of the stem, produced grains resembling those of Sorghum, but larger. This phenomenon led me to believe that the relationship between the Maize (which is monœcious) and the Sorghum, is more intimate than one would have at first supposed. I had proposed to myself, to make some further interesting, and probably useful, experiments with this hybrid; but a few months' absence from Lucknow put an end to them. On my return I could not find the seeds, and the native gardener could not account for their having been lost. Latterly I perceive that Mr. Duthie, of the Saharunpore Botanic Garden, has effected a similar cross. I hope he may be more successful than I was, and that he may be perhaps able to prove, that the Zea and the Sorghum are not, after all, distinct genera! With regard to the original Cuzco Maize, nothing could be made of it. It was evidently not suited to the plains of India, its habitat being in the Andes."

We have to remember, that in the old world, there does not appear to be the same knowledge of the extent to which plants will naturally vary, independently of hybridization, as exists in the United States. Hybridization is, in these old-world

experiences, continually brought in to account for phenomena which here we should refer to mere "sporting," which is the every-day word for natural variation. In our country, we continually find Indian corn with small Sorghum-like grains among the male flowers in the tassel; and male flowers from the ends of the cob, where only true females should be. And this, and nothing more, strikes us as the true explanation of the supposed hybrid the East Indian gentleman supposes he has found between Sorghum and Maize.

DRYAS OCTOPETALA.—H. Correvon, of Geneva, gives the *Gardener's Chronicle* the following in regard to this pretty alpine plant:

"This is one of the most graceful of the plants of the Alps. It is called 'Swiss Tea,' because the population of the alpine cantons make a drink from it which with them takes the place of tea. It occurs everywhere in the region of the Alps, but it seems to prefer more particularly calcareous soils. It is hardly to be found above 7200 feet in elevation, and its inferior limit appears to be about 4900 feet.

"Some horticultural books, on account of its generic name, say that this species grows in the woods, but this is a complete error. It is never found in the shade, but always exposed to the rays of the sun, and on a stony soil, frequently limestone. Often it is found on rocks most exposed to the sun, and where the rays penetrate into the fissures. It continues in bloom a long time in the Alps, and its clusters, which extend so as to form a carpet on which one may lie down, have flowers nearly all the summer. The shining green of its foliage, white and tomentose underneath, the graceful form of the crenate and dentate leaves, produce a pleasing impression on the traveller who visits the Alps; but when the immense tufts of dwarf procumbent verdure are covered with flowers, each like a small wild rose without its thorns, the effect is very striking. One cannot help plucking some of them, and what traveller is there who has not wished to lay himself down to rest on these inviting tufts."

[The generic name, *Dryas*, was given most likely from the leaves resembling an oak leaf, and not because like its namesake the *Dryads*, it likes to live in oak woods. Pursh found it on the White Mountains in New Hampshire, but it has not been seen since his time. It was probably left there by some receding glacier. In Alaska the Editor was examining in Glacier Bay, one of the huge glaciers of that region, and on a huge pile of glacial drift left by a portion of the edge of the glacier that had recently melted away, the only plant for scores of acres around, was a mass of *Dryas*, forming a carpet, such as described here, of about three feet over. It had evidently been brought down from nobody knows how many miles in the

interior, by a ride on the surface of the glacier on which a mass of earth with the plant had fallen, perhaps a hundred years ago, for a glacier moves very slowly. The incident, however, seemed to suggest that the *Dryas* was a thoroughly arctic plant, and its presence should imply arctic surroundings in the past.—Ed. G. M.]

SCRAPS AND QUERIES.

GRAFTING HYACINTH BULBS.—A correspondent from Lancaster, Pa., writes: "A Philadelphia correspondent of your excellent *GARDENERS' MONTHLY* desires to know whether he could take two crocus bulbs, yellow and purple, cut them in halves, and place the cross sections of half of the yellow and half of the purple together, whether he would succeed in getting the yellow and purple flower seemingly from one bulb.

"Darwin says in his book on *Animals and Plants, under Domestication*, Vol. 1st, page 474; that, 'the author of *Des Jacinthes* impressed me with the belief not only of his extensive knowledge, but of his truthfulness. He says that bulbs of blue and red hyacinths may be cut in two, and they will grow together and throw up a united stem (and this I have myself seen), with flowers of the two colors on opposite sides. But the remarkable point is, that flowers are sometimes produced with the two colors blended together.'

"He does not say whether or not the bulbs were cut so as to divide the flower stem, but from the fact that the two colors blended together, I would infer that they were.

"I would not like to assert positively that your correspondent could get the result he desires; but would advise him to try several experiments, leaving the flower stem uncut in some, and cut it in others. He might in this way find a method that would be successful."

[It may be interesting to add, that the correspondent who first made the inquiry, has been moved, he tells us, to try the experiment. It is remarkable that with roots so easily obtained and divided, no one seems to have undertaken the testing of the matter.—Ed. G. M.]

DOUBLE FLOWERED CALLA.—Mr. J. H. Slocombe, New Haven, sends a pretty specimen of a double calla. The plant, after starting to turn the green leaf into a white spathe, as in the ordinary case, changed its mind, lengthened its flower stalk a little, and then tried to make another. Like all irresolutions, both efforts are spoiled.

LITERATURE, TRAVELS AND PERSONAL NOTES.

EDITORIAL NOTES.

TWENTY-SEVENTH VOLUME OF THE GARDENERS' MONTHLY.—It is a great pleasure to feel, in closing our 27th and entering on our 28th volume, that in all these many years we are receiving the continued support of intelligent Horticulturists everywhere. Our main object is to keep Horticulture in the advance. We do not propose to ourselves to take a banker or storekeeper, who has hardly knowledge of a blade of grass, and tell him how he can make a fortune in a few months. This task we leave to our able brethren of the Agricultural press. Our mission is to enable humanity to gather the greatest amount of pleasure possible from rural pursuits. We have thus a very broad field to work in. We embrace the one who has to toil and sweat in order to get a miserable piece of bread and butter, and whose labors by increased intelligence we would lighten; as well as the millionaire who wishes to make his garden all that is to be understood by the brightest and best. We are glad for our own enjoyment to know that the editorial work of twenty-seven years is appreciated; but we are the more glad on the publisher's account that so many in sending their own, or an additional subscription from a friend, tell him how much they appreciate the work. The following from a subscriber, "H. F.," Austin, Texas, is a sample of many:

"Every number has come to hand punctually and its appearance is always hailed with pleasure. In theory as well as in practice it is every thing we could desire and is always read by me with great interest."

Another—"C. F. B.," of Galveston, Texas—says: "I have only subscribed since August last. It would have been worth several thousand dollars had I subscribed five years ago."

THE SEED BUSINESS IN PHILADELPHIA.—The seed trade is said to be depressed, but there must be good life in it yet, judging by the magnificent building recently erected at 1711 Filbert Street, Philadelphia, for Wm. Henry Maule. It is 117 feet in depth, and five stories high, and will be wholly devoted to Mr. Maule's business. Mr. M. is one of the younger seed firms of the country, but has managed to get in his comparatively short

career, the entire confidence of the community, and all will rejoice at the evidence of his success.

IGNORANCE OF THINGS AROUND US.—Mrs. Sarah K. Bolton says, in a very nice article on the Isle of Wight, in the *Independent*:

"We pass Steeplehill Castle, of which Joseph Paxton, who built the Crystal Palace, said: 'I have visited nearly every place of note from Stockholm to Constantinople, but never have I seen anything more beautiful than this.' Further on is Sandrock Hotel, described by Black in 'Madcap Violet,' overgrown with ivy, the grounds a mass of shrubbery. I asked an old man coming up the hill with a wheelbarrow, the name of the vines. 'I don't know, mum,' he replied to each question. He had lived here from boyhood, and had never asked the names of the simple things growing about him. How we shut our eyes and ears to knowledge, and drift on like pieces of wood or stubble!"

Though Mrs. Bolton charitably introduces all of us into the ignorant circle under the "We," one may incline to think she has the man with the wheelbarrow chiefly in mind. Unfortunately she may emphasize the "we" if she wishes. We need not go outside of Boston, New York, or Philadelphia, to find people in silk and broad-cloth, and who would feel insulted to be supposed to know even what a wheelbarrow means, who would have to answer, "I don't know mum," when asked the names of the vines on houses they perhaps own. Cleveland, where Mrs. Bolton lives, may do better, because they have little else but Virginia creepers and Honeysuckles to learn the names of—these being about all the "vines" in common use there.

SEEDLING CHRYSANTHEMUMS FROM MR. RAWSON.—A very pretty bronzy yellow of the semi-double class, exhibited at the New York show, has been sent us by Mr. Rawson, of Elmira, N. Y. Mr. Rawson is a great lover of Chrysanthemums, and delights in efforts at their improvement.

HISTORY OF THE NOISSETTE ROSE.—Although we have in the past given the history of the Noisette rose, it is told in an interesting way in the following from the *Gardeners' Chronicle* which will bear repetition here:

"The Noisette rose has a curious history, and, although so thoroughly French in its name, owes its origin to America, for there lived about the time when the great European wars of Napoleon

had come to a close a French nurseryman of the name of Philippe Noisette, at Charlestown, in South Carolina, who had hybridized the old Musk rose with a rose called Champneys' Pink Cluster, which he sent to his brother, Louis Noisette, a nurseryman at Paris. Pink Cluster was the product of the white Musk fertilized with the blush China; and John Champneys, its raiser, ought to have some credit in the matter although he was put on one side; and while Noisette is known, Champneys', except in America, is unknown. When Louis Noisette introduced the rose it created quite a furore in Paris. Its habit was so remarkable, and its perfume so pleasant, that everybody was desirous of possessing it."

PUNISHMENT TO BOYS FOR STEALING FLOWERS.

—The London *Gardeners' Magazine* says:

"The stealing of a geranium, by a boy fourteen years of age, resulted in a sentence of ten days' imprisonment, pronounced by Mr. Barstow at the Clerkenwell Police Court. Not many, we think, even amongst lovers of gardens, will approve of the sentence; but we can only judge the case by the report."

In Philadelphia, such a boy would be sent to a reform school for a short time—a much better plan to protect geraniums, we think, than the old world style of the jail.

LOVE OF GARDENING IN ENGLAND.—A paper before us, notes that at an exhibition in a comparatively small village in the Isle of Wight, Shanklin, there were no less than 753 entries. That Mr. Charles Meehan was the judge, and that notwithstanding in many cases the competition was very close, the decisions gave general satisfaction. What a commentary is this on the universal love of gardening through all classes of the English people! Nearly every house in the village must have sent something to the show.

BENEDICT ROEHL.—Few European botanical collectors have been better known in America than Mr. Roehl, who recently died in Austria in his 62d year. A large number of plants bear the name of Roezlii in his honor. The writer of this first met with him many years ago, in a very interesting manner. He was alone in a piece of woods along one of the rivers in Missouri, and examining minutely some specimens of what was to him then a rarity, the true Chestnut oak, *Quercus castanea*, of which he had found before only a few scattered specimens in Pennsylvania, when he observed a man kneeling by a spring, and seemingly washing out a pocket handkerchief. Advancing, the writer found the man engaged in washing out the pulp from the fibre of a species of nettle which grew there. The fibre was very white, slender and strong, and the stranger was

very enthusiastic on the prospective value of the nettle fibre. It proved to be Mr. Roehl, and the meeting of two friends, who had long heard of but never seen each other, in that lonely piece of woods, many hundreds of miles from each others' home, the reader may well imagine was a very pleasant one.

MOSES COLE.—The history of American gardening will some day be one of the interesting branches of general study, and it is well to place on record notes of the departure of those who have been instrumental in advancing it in the different sections of our country, as well as some account of their successful work. As we go to press, we learn of the decease of Mr. Moses Cole, long known in connection with Georgia nurserymen. The nursery interest of Georgia has grown to be one of great importance, and possibly no one has had so great a share in bringing about this great work as Mr. Cole. By reason of advancing years, he resigned his very successful nurseries at Atlanta to younger hands about a year ago, after over 20 years of labor in connection with the trade. His death occurred at Atlanta, on the 8th of December, as we learn by a brief note.

LOUIS C. LYTE.—Mr. Lyte was one of the oldest of Pennsylvania nurserymen, having been for many years the proprietor of the Smoketown nurseries, near the town of Bird-in-Hand, in Lancaster county. These were founded in 1840, and always bore a high character. Thousands of fruit trees in Eastern, Southern and Central Pennsylvania, were originally propagated on these grounds, and the enormous patronage brought, what few modern nurseries bring, a considerable degree of wealth to the proprietor. He was a man of sterling integrity, and like all good men, took an interest in public affairs. He was for a long time in service on the School Board, and also for many years elected Justice of the Peace. He died on the 16th of November, in his 72d year.

TRANSACTIONS OF THE AMERICAN ASSOCIATION OF NURSERYMEN, SEEDSMEN, AND FLORISTS.—The proceedings at the Chicago meeting have recently been issued in very neat form, and may be had of D. Wilmot Scott, Galena, Ill., Secretary. It is a work of value to every one in the trade.

REPORT OF THE FORESTRY COMMISSION OF THE STATE OF NEW YORK, ALBANY, 1885.—In 1884, the New York Legislature appropriated \$5,000 to be used by the State Controller in the employment

of experts to report a system of Forestry. He selected Prof. Sargeant, D. Willis James, W. A. Poncher, and Edward M. Shepard, Esq. The members have taken no salary, using the money only for their personal expenses and maps.

The Commissioners do not seem to have done anything for a system of forestry for the State, but made a report, looking chiefly to the preservation of the Adirondack forests. They recommend the appointment of a Commission, the first one to be chosen in "1866," the members to serve without salary, but personal expenses to be paid; one Forest Warden at a salary of not less than \$3,000, nor more than \$4,500; two inspectors, salary between \$1,500 and \$2,500; one clerk, salary from \$1,250 to \$2,000. Forestry rooms, &c., are to be provided at Albany.

To give the Commission work to do, two Bills are proposed; one, "An Act for the preservation and care of the Adirondack Forest," the other "An Act for the speedy collection of taxes on the forest lands in certain towns," in the Adirondack region.

We have read this report very carefully, and feel that the State will be well repaid in the facts furnished. In regard to the recommendations, we see nothing to change our views, that forestry efforts in America should rather be in the line of planting new forests, than in the preservation of old ones. The report shows that in old forests, it is absolutely impossible to prevent forest fires. By a staff of officers and guards, such as the new laws prescribe, some few fires will no doubt be prevented, or ought to be; but the danger is but slightly corrected, and in spite of all, the forests will have to go.

As to the appointment of a Commission, in order to obviate the evils of the elective principle that underlies American institutions, all experience shows that it is "out of the frying-pan into the fire." They become in time, a greater mass of deadwood than the most famous old forest can present; and withal dangerous and expensive toys.

The Forestry question is a very difficult one to bring under practical legislation; but after reading this very intelligent report, we are more than ever convinced that the only effective legislation will be in the line of encouraging efforts by individuals or companies in planting new forests, rather than in sentimental and enormously expensive efforts to preserve the old and half-rotten ones.

TRANSACTIONS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY, 1885. Part I.—We must again congratulate this honorable Society on the

excellence of its Transactions. As a general rule, the magazine and the newspaper have superseded society publication: and what is worth knowing is usually found therein. Much that appears in many volumes of Proceedings, is wholly stale by the time it appears, and of little use for reference in after times. It is different here, and what generally appears in its pages will be valuable for all time, and very welcome to the library shelves of every horticulturist. In this we notice that the Society has been so fortunate as to get a paper out of Jackson Dawson, of the Arnold Arboretum, on tree seed sowing. Mr. Dawson is one of those enthusiastic lovers of his profession who has no time for anything but work for the love of it—no time for writing, and how the Society got this valuable paper out of him will ever be one of the mysteries of the age we live in. The experience of one who is, perhaps, the most successful arboriculturist in America, will have a lasting value. The other essays in this part are of a very high order of excellence.

PRUNING AND TRAINING OF THE VINE.—An address before the American Horticultural Society at New Orleans, by E. Williams, of Montclair, N. J.

Our readers must not confound this with the American Pomological Society, though the titles are similar. This essay is one of the many useful papers that will appear in the forthcoming volume. Mr. W. H. Ragan, of Greencastle, Indiana, is the Secretary.

This essay of Mr. Williams is profusely illustrated and is made up from the actual experience of the writer. It is in marked contrast with the contents of many regular books on the vine, in which the "systems" taught, never get, in this country, beyond the book illustrations, nor, for that matter, in the old world, either. We are quite sure that of the pictures of vine training and pruning, as usually seen in standard books on grape culture, scarcely once in a lifetime, if ever, has the oldest of us ever seen the like thereof in the whole world. At any rate, American grape culture, as we have it in our day has had very little aid from European experiences, and is an outgrowth of American culture and successes. Mr. Williams' essay is just in this line, and on this account will be very welcome to American vine culturists.

HOMES FOR HOME BUILDERS.—By David W. King. New York: Orange Judd Company, 1886.

This is a small octavo, 251 pages, furnishing designs and working plans for country people out of the reach of professional architects. Specifications

and estimates of cost are given, with full notes on cements, mortars, and building materials generally. The man who proposes to build, will find this an excellent guide; and the one who only hopes to have a nice home some day, may profitably have it in his library, to be on hand when consultation will be a blessing to him.

THE STRUGGLE FOR LIFE.—This interesting topic has been treated in a masterly manner by Dr. M. T. Masters. It forms the 6th chapter of its recent work on plant life, by Dr. Maxwell T. Masters. So highly is it appreciated in Europe, that it has been translated into French, and the result, *La lutte pour l'existence*, by Dr. H. Fons-

ney, is now before us. Much of it is an epitome of the many years of experiment by Gilbert and Laws, which were tabulated by Dr. Masters.

SUPPLEMENTARY NOTES ON RESTIACEÆ.—In the woods and marshes of South Africa and New Holland, there are great numbers of grass-like plants, of which we believe America has no representative, which are intermediate between our rushes and sedge grasses, and are known to botanists as the order Restiaceæ. De-Candolle in 1878, issued a complete monograph. This work of Dr. Masters will be essential to those who have this work, as it brings the knowledge of these plants down to the present time.

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

STATE HORTICULTURAL MEETINGS.—After we went to press in November, to get out our December number, we had numerous applications to notice the December meetings. Here is now the 10th of December, the last day our publisher allows us to send in "copy," and the only notice for January meetings is one from Mr. Engle, of the Pennsylvania Society. We are always glad to help these useful bodies, if they will give us the chance.

EXHIBITORS AND PREMIUMS.—Almost all our exhibitions suffer at times from the withdrawal of exhibitors whose presence is always welcome, who smart under a sense of injustice at the hands of the judges. On the other hand, it is often very hard to get good judges to serve, from the fact that they smart under the insinuations of disappointed exhibitors, that improper motives or ignorance affect their decisions. Societies should themselves agree on some general points of excellence on which the judges could rely for support. What is or is not the "best half-a-dozen" of any thing, has a very indefinite meaning. In a hundred men, what is "best" in the eyes of fifty, will not be best in the estimation of the other fifty. As it is now, one never knows what is the ground on which committees make awards. A large number of exhibitors, when disappointed, will make allowances for this, and feel that if they lose a premium to-day they think they deserve, tomorrow they may get one given them that the other

fellow ought to have had. Then they are satisfied to accept the decision that by competition they invited. But there are others who, if they feel their articles did not get the premium they believe they ought to have had, can make no excuse for a reasonable ground for a difference of opinion, and from that time forth "their good works are seen no more in all the land." Even these weak brethren are worth caring for, and might be saved if rules for judging were formulated wherever practicable for the guidance of the judges. In roses, dahlias, and some other things, the "points" of a good thing have been defined and agreed on, and this rule might be extended to other things.

EXHIBITORS OF CHRYSANTHEMUMS.—A correspondent calls our attention to the exhibit of Chrysanthemums made by Mr. P. Conlin, gardener to P. Roberts, Jr., Esq., who took the first prize for the best 25, and second for the best 12, in the amateur's list at Philadelphia. He thinks in our notice the most of these were overlooked. There were a large number of other excellent exhibitors whose names could not appear in our notice for want of room. As our Magazine goes over the whole world, and has as many persons subscribing in New York, Boston, Baltimore, Chicago, Cincinnati, New Orleans, and other places perhaps, as in Philadelphia, we cannot put in a long list of successful exhibitors in any one city, without putting in those from all. It is plain that this cannot be done. We never attempt it. All we try to do for our readers is to note a few points of excellence or novelty here and there that will be of as

much interest to a reader in California as in Nantucket.

It would be very pleasant if we had space to do more, but we trust all our readers will appreciate the difficulties that surround this question. The local newspapers are the mediums through which full lists of successful exhibitors should appear.

PENNSYLVANIA HORTICULTURAL SOCIETY'S CHRYSANTHEMUM SHOW.—Mr. J. E. Mitchell, President of the Pennsylvania Horticultural Society, has issued a card of thanks to the press, the public, the exhibitors, and to the distinguished florists who visited it from abroad, for their appreciation of "one of the most successful displays the society has held for several years past."

DESIGNS OF CUT FLOWERS.—It is said that at a recent great Horticultural exhibition, the judges were puzzled whether a cut flower composition was intended to compete in the bridal or funeral department.

THE STATE HORTICULTURAL ASSOCIATION OF PENNSYLVANIA.—The annual meeting of this Society is always looked forward to by many, as one of great interest and pleasure. The endeavor has been, of late years, to embrace in its scope all lovers of gardening in any of its branches, as well as those who merely grow fruit for profit. It is a Horticultural Society, as well as a Society of market-men. There has been, therefore, an increase of interest in the meetings, and those who feel pleasure in their specialties, must of themselves see that they receive attention. The meeting is to be held this year at Reading, on the 20th and 21st of January; and the Reading people who are fond of gardening will, no doubt, see that those who come to help instruct them, are encouraged by a good attendance of those from whom they may expect to get some information in return.

Railroad tickets at reduced rates, may be had of E. B. Engle, Secretary, Waynesboro, Pa.

THE PENNSYLVANIA HORTICULTURAL SOCIETY.—We received the following note from Mr. J. E. Mitchell, President of this venerable body, on the 21st of December, wholly too late to be of any service to him in securing a "Christmas present" from any of our readers, or even a present for the New Year. All communications should be sent previous to the 5th of each month, if notice in the succeeding issue be desired.

"The Pennsylvania Horticultural Society, founded in 1827, is the oldest in this country. It was

founded by some of the best men of that day: Dr. Chapman, Geo. Pepper, John Vaughn, Jos. Hopkinson, Nicholas Biddle, Chas. Chauncey, Horace Binney, M. Carey, D. Landreth, D. Maupay, Jno. McArar, and other public spirited citizens. It has had for Presidents, Horace Binney, Jos. R. Ingersoll, Geo. Vaux, Caleb Cope, Robt. Patterson, M. W. Baldwin, and other distinguished citizens. W. L. Schaffer, recently deceased, occupied the chair for 17 years. In 1844 this Society had a membership of 800 of our best citizens, and after an uninterrupted and useful life of over 40 years, its membership is now about the same number, although our population has increased about four-fold during that period; had the taste for the beautiful in nature increased in the same ratio among our people, this Society should now have about 3,000 members; this would enable its officers to increase its attractions, add to its library, publish its transactions, and increase the moderate money premiums now offered, and thereby stimulate our florists and others to increased exertions in improving the products of the garden and orchard. As this Society now depends on receipts from membership to carry it on, no more valuable Christmas present could be made, than \$3.00 which constitutes a membership for a year."

At the spring exhibition of this Society, Tuesday, March 16th, to Friday, 19th, 1886, the General Union of Holland for the Promotion of the Cultivation of Bulbs, under the patronage of the King of the Netherlands, offers the following prizes to be competed for by nurserymen, seedsmen and florists only: Hyacinths, 50 named bulbs, in 50 pots, forced in pots, first prize, Gold Medal; second prize, Silver Gilt Medal; third prize, Silver Medal.

In addition, the Pennsylvania Society has decided to offer premiums to be competed for by ladies only: 12 Hyacinths, grown in glasses, first premium, Gold Medal; second premium, Silver Gilt Medal; third premium, Silver Medal. 6 Hyacinths, grown in glasses, first premium, Silver Medal; second premium, Bronze Medal.

Very much interest is being taken in these premiums, and from all we hear it is likely to be an unusually interesting occasion.

In addition to these special attractions, there will be premiums open to all contributors. A very full list of premiums, for all sorts of pretty things, has been issued and may be had of A. W. Harrison, Secretary, Horticultural Hall, Broad Street, Philadelphia.

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" " " " 3 " " "		50.00
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Model formed flowers of good size. Ground color, very pure white with the edges of the petals very distinctly marked with crimson. 35 cts. each; \$3.00 per doz.; \$20 per 100.

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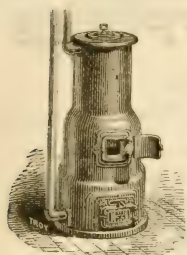
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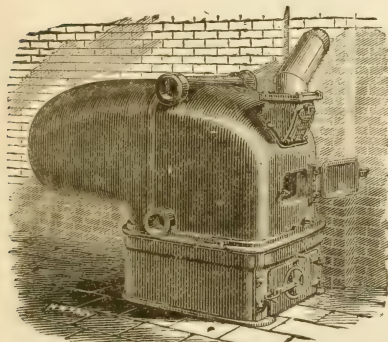
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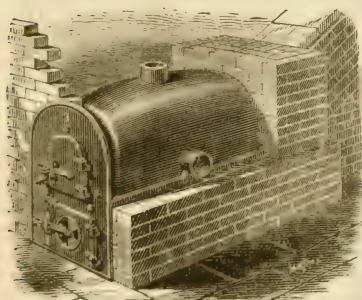
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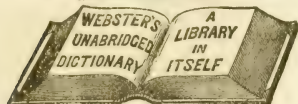
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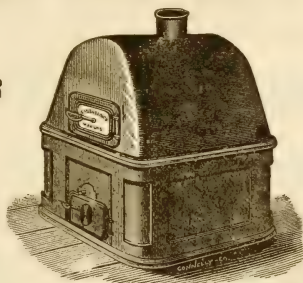
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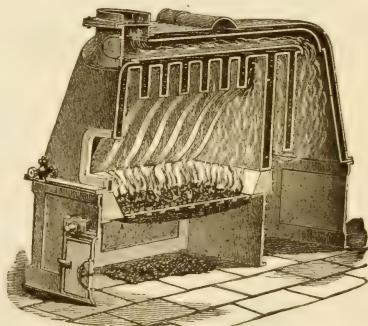
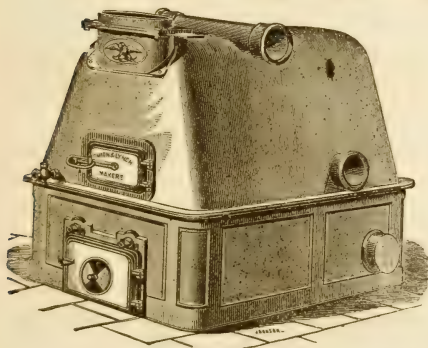


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
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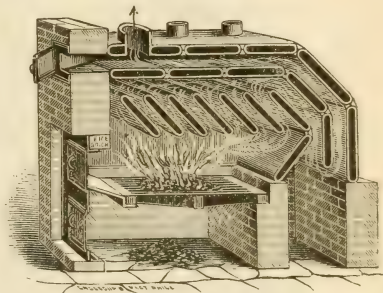
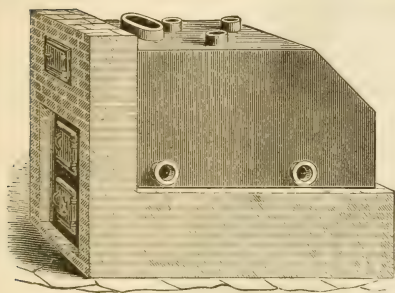
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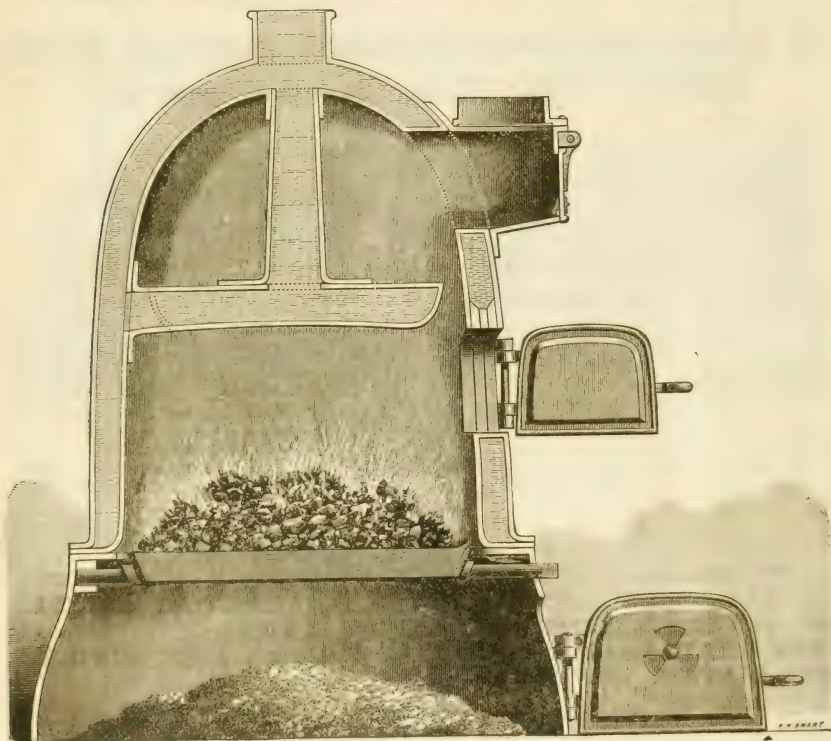
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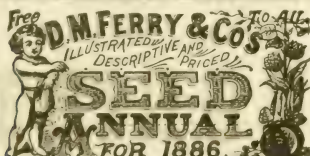
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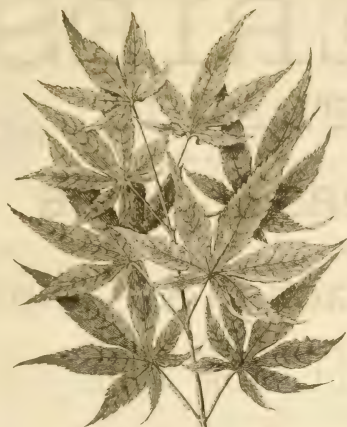
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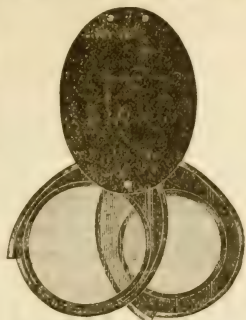
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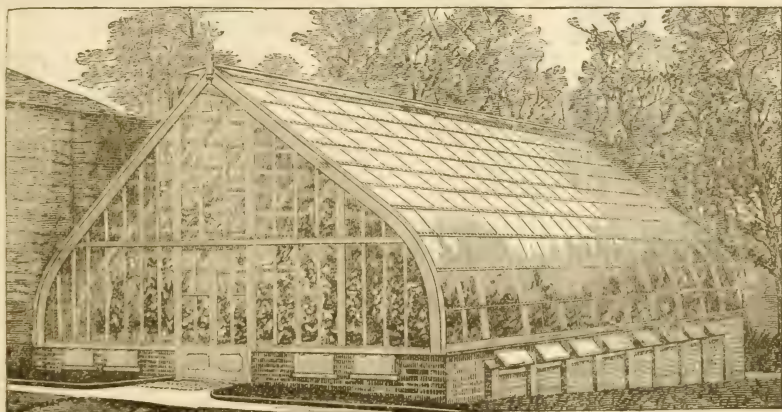
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THE
GARDENERS' MONTHLY
AND
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DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

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FEBRUARY, 1886.

NUMBER 326.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

There can be no question about the great beauty to be derived from carpet bedding, when judiciously applied. The proviso is very essential, as misplaced beds, or wholly inappropriate designs are frequently met with. We must remember that a design that looks pretty enough when we see all the outlines harmonizing with each other as we look down on it drawn on a sheet of paper, presents a very different appearance when seen horizontally as a flower bed on the ground. The design is everything in a piece of carpet or mosaic bedding, and often we can only see this design when we look down on the bed from an upper window or some higher elevation. In some grounds sunk gardens have been prepared wholly for the display of these styles of gardening, but there is danger of violence to good taste even here. The Fairmount Park

design is that of a sunk garden, but the effect is wholly spoiled by the apparent fact that the garden is sunk expressly to display the ornaments, while true taste in gardening requires that there should be something to ornament in the first place, before ornamentation begins. We can give a

certain admiration to treasures exhibited in a jewel case; but jewels are of real value only as they add to the beauty of some pretty person. A carpet bed therefore should rarely be made for its own sake; but because it will add a beauty to the location, or increase the interest of a pretty garden.

In arranging for carpet beds one must remember that gardening is a combination of nature and art, and in gardening taste requires that they should so run together that one may scarcely tell where one ends or the other begins. Carpet bedding is one of the best possible devices for combining art and nature. It is therefore always most effectual when used in con-



nction with garden architecture. We give with this a very good design for a bed in connection with a garden vase, piece of statuary, or to place pretty close to a building under a bay window or some such projecting ornament. In the latter case a peculiar artificial looking plant, such as an Aloe or Dracæna, would be of course more effective for the circle than a vase or statuette. The narrow margin has to be wholly of one kind of plant, which may be of Echeveria, Centaurea, Leucophyton, Silver Geranium, Gold Geranium, Golden Feverfew, or some other dwarf plant that may be chosen to harmonize whatever may be agreed on. The fine projecting points may be of one or several kinds, and the ground-work from which they project, and which forms the posterior semi-circle, be all of one kind. Many variations may be afforded by a plan of this kind. For beds formed wholly of succulents of very low growth, or similar plant, and which may be set in the bend of a curving walk, the octo-point star is very popular. It is very easily made, having a square for its working outline, the sides of which are divided into two equal parts. Some put a slender pyramidal plant in the center of such a bed, but to our mind it is prettiest when the whole design is but a gentle rise from the circumference to the center, "ginger-cake" fashion. There are very few flowering plants outside of the Zonale Perlargonium class that are well adapted for carpet bedding. Our dependence is mainly on colored leaf varieties. The dwarfer kinds of Petunia, if of one shade of color, as they may be when propagated from cuttings, do pretty well if kept well pinched back to prevent them from running too much to seed. Carpet beds in general, require frequent pinching in order to get the best results.

Some use for this purpose a pair of scissors or sheep-shears. A plank on blocks at each end, is used as a platform on which to work.

COMMUNICATIONS.

TREES AND HEDGES IN WASHINGTON.

BY M. H. LESTER.

In no city or town that I have visited are the street trees in as good condition as here. I do not exactly know who is responsible for this, but some one or other has something to be proud of. There are over 1,000 miles of trees, and one can travel for miles on streets and avenues lined with the same species, and the same age and planting,

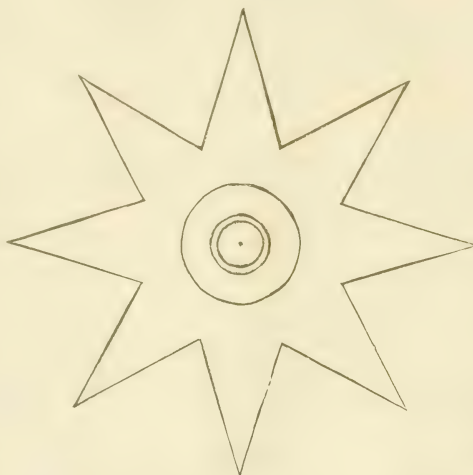
without a break; not long, tall, scraggy, spindling things, but strong, robust, healthy trees; and the girl of the period might say, "they look just splendid," even now, bare and naked though they be.

I notice that as a tree is planted, a box is put around it, and the tree secured to this with thongs of leather to prevent any possibility of its getting injured. This has a great deal to do with keeping the lines so even.

A good many species and varieties

are used—Maple, *Acer negundo*, largely planted in some portions of the city; in others Poplar (*Populus angulata* or *monillifera*); in other parts a very thrifty lot of Elms (*Ulmus Americana*), Buttonwoods (*Platanus occidentalis*), also Linden (*Tilia Americana*), and others, all healthy, and of good shape.

Great care must have been taken to choose the location most suitable for the different kinds. Passing where some men were making holes a short while ago, I noticed they filled up with water. I thought that would be bad treatment for anything unless Willow or Alder; but I saw some very pretty Poplars in the neighborhood. At the Agricultural Department grounds an attempt has been made at grouping; but I believe had to be abandoned for want of space. This is a very praiseworthy object, as one can notice



the habits of different varieties with so great facility.

But the principal feature that gives the Agricultural Department a different appearance from any other of the public grounds around the city lies in the hedges. Beautiful they are, both evergreen and deciduous. There must have been some one around there some time or other, and perhaps is yet, that knew how to handle a hedge. An Osage hedge at the rear of the grounds is also the street boundary, and no picket fence could serve the purpose as well.

Industrial Home School, Washington, D. C.

[The management and arrangement of the Agricultural grounds is and has been from the first in the hands of Mr. Wm. Saunders. The public lost one of the most successful landscape gardeners in the Union when the government was wise enough to secure his services.

The trees of Washington have been wholly in the hands of three gentlemen who are known as "the Parking Commission." Mr. Wm. Saunders above noted, Mr. W. R. Smith, of the Botanic Garden, and Mr. John Saul, the well-known nurseryman, compose this body. No wonder the success has been so great.—Ed. G. M.]

A BEAUTIFUL SOUTHERN NATIVE VINE, "COCCULUS CAROLINIANUS."

BY MRS. J. S. R. THOMSON.

Extract from Peter Henderson's "Hand-book of Plants:"

"*Cocculus Carolinus*, derived from *Kokkos*, the systematic name of *Cochineal*, given to this genus because most of the species bear scarlet berries. Nat. Ord. *Menispermaceæ*. An extensive genus of climbing shrubs remarkable for their medicinal properties. With one exception the species are all natives of the East Indies. *Cocculus Carolinus*, common in woods and thickets in states from North Carolina to Florida, is a very handsome climber remarkable for its racemes of white flowers, followed by clusters of bright scarlet berries that remain on the vine all winter. "This is one of the most beautiful climbers under cultivation, and will succeed well where there is not more than 10° or 12° of frost."

I feel it is presumption in me to try to add to what has been so well told; but, few comparatively, see either the plant, or, if they do, know it under its true name, or know of the extreme elegance of this altogether lovely native climber. Others can write of exotic plants and bulbs, but if I can induce my countrymen to plant and cultivate more extensively the many rare and valued (in foreign countries), plants that we have

in such abundance here, I will feel that I too deserve the "nation's gratitude." Who is it says: "To the man who teaches us to grow two blades of grass where only one grew," &c.? So I hope to obtain that same nation's gratitude. I fain must add a few words to description already given above, hoping to gain for it more genuine lovers such as I am. Why is it that we all delight and exult so in the grandeur of our late *Chrysanthemums*? But because we know that stern winter will soon blast all of our lovely summer darlings, and only to those blest with means of keeping them protected, will they gladden our senses for many a long dreary month. That thought enhances their value, and for this reason *Cocculus Carolinianus* is doubly valuable, for even the stern cold wintry blasts do not intimidate or destroy it, but the severer the frost the more beautiful do those same scarlet berries become. At first they are a pale green, then pale rose, afterwards a deep glowing scarlet; and after severe frosts the berries become transparent as glass, disclosing distinctly the seed through this transparent veil. Before me now lie long graceful pendulous festoons of this exquisite child of our forests, filled with thousands of berries in all stages, they not having yet at this date, November 3d, attained all of their full perfection. This vine is tuberous and delights in cool shady situations, with rich sandy soil. Here, in our rich bottom land adjoining water courses, it is found in greatest profusion and beauty. Often for a space of 20 or 30 feet you will not be able to penetrate into it, for it climbs up every cane and twig, and festoons them with a grace indescribable. The leaf is not its least attraction, in shape very much like *Senecio scandens* or German ivy, only crisp and satiny; some as long as three inches, and growing at regular distances, one inch apart, all along the stem alternate. At every leaf is found the cluster of berries, never less than three, from that up to one hundred. In some the clusters are full three inches long, by one wide. Just imagine it if you can; facing such a thicket, with millions of these gleaming scarlet berries, and grieve as I do that all or more cannot enjoy the entrancing sight with me. I have sent many clusters off this fall to my flower-loving friends; and was told by a prominent nurseryman that it was cultivated at the North under glass—he had often seen and admired it, but had never known its name. Once I was out and found a vine growing in a wild plum tree—6 feet high by 5 through—which was loaded with this exquisite vine in full

fruit. Be assured your correspondent did not leave it there, but wended her way joyously homeward burdened with long branches, some 6 feet; and soon every vase and picture in her home were decorated for the admiration of all beholders, and loud and continuous were the praises it gained, and so well deserved. I am enthusiastic, I know, but I am not too much so, and earnestly ask our kind Editor to bear me out in it, as he is well acquainted with, and loves the many wildlings of our fair South land.

I would like to ascertain if cochineal for commerce can be obtained from it. Its local names here—two of them, both misnomers—are Bambo and Wild Sarsaparilla. I copy from "Chambers' Encyclopedia," of an East India variety—"Cocculus indicus"—name of a very poisonous seed from East Indies, used in Britain notwithstanding its prohibition by act of Parliament, to save not only malt and hops in beer brewing, giving to beer a bitter taste, but very deleterious in its effects."

Spartanburg, S. C.

[This plant well deserves cultivation for the sake of its foliage and delicate habit alone. It is quite hardy about Philadelphia. The Editor has a plant in mind, that for a number of years was one of many similar ornaments on a trellis that covered the south wall of an old botanist's residence. But, as the plant is monocious, there will be no berries from a single plant in cultivation.—Ed. G. M.]

NOTES ON THE PARKS AND GARDENS OF CHICAGO AND ST. LOUIS.

BY H. NEHRLING.

Last summer (July, 1885) when I visited Chicago and St. Louis, I spent much time in looking through the parks and private plant-collections of these cities. The most attractive park of Chicago is Lincoln Park on the north side of the city, with its highly picturesque landscape views, under superintendence of Mr. H. J. DeVry, an eminent German landscape gardener. Nothing can be more impressive than the gigantic flower beds in front of the greenhouses. There beautiful specimens of carpet gardening may be seen. The air was filled with the fragrance of Iberis, Cheiranthus, Heliotrope, Mignonette and Sweet Alyssum. Interesting were also the sub-tropical beds. I have seen many greenhouses, but none so interesting, so attractive and clean, everything so tastefully arranged, as the Lincoln Park houses in charge of Mr. Albert Dörl. Beautiful specimens

were there of *Cordyline indivisa*, *Dracæna ferrea*, *D. rubra*, *D. Brasiliensis*, *D. Haageana*, *D. congesta*, *Crotons*, *Achimenes*, *Gloxinias*, *Peperomias* and *Ruellias*. Especially interesting were the large plants of *Alocasia odorata*, *A. violacea*, *Anthurium magnificum*, *Philodendron pertusum*, *Spathiphyllum cannaefolium* and other foliage plants. The sweet odor of *Peperomia resedæflora* filled the whole house. And now let us enter the palm house. There is no large collection to be looked at, but very beautiful specimens are to be seen, and every plant is labeled by Mr. Dörl in such a way that the visitor can plainly read the name. I have never before seen such nice specimens of *Seaforthia elegans* and tree ferns, such as *Alsophila Australis* and *Blechnum Brasiliensis*. There the plant lover can see fine plants of such palms as *Livistona sinensis*, *Chamærops excelsa*, *Corypha Australis* and many others. Strong plants of *Strelitzias*, *Marantas*, *Bananas*, *Ficus imperialis*, *F. Alphonse*, *Cycas revoluta*, *Curculigo recurvata*, *Elletaria cardamomum*, *Pimenta aromatica*, *Aralia leptophylla*, *Imatophyllum miniatum* (the last in flower) may be seen. In this house is also a good though not extensive collection of orchids, mostly growing on blocks of wood hanging down from the roof. I observed *Phajus grandiflorus*, *Oncidium altissimum*, *Lycaste aromatica*, *Epidendrum aromaticum*,—last three in flower—*Peristeria elata*, and a few others not named. Such a beautiful plant-house which has so many attractions, and in which everything is so tastefully arranged, with the immense flower beds in front of it, must awake a taste for flowers and ornamental gardening in due time.

On the northwest side of Chicago, we find Humboldt Park, with its still lovelier landscape scenes. The soil is here black and productive, contrary to the pure sand of Lincoln Park. Trees and shrubs look here much healthier. The greenhouse, though crowded with many interesting plants, is too small. A new and large one is already built. Mr. G. Rahfs is superintendent, and he is assisted by an eminent landscape gardener, Mr. Karnatz. In the greenhouse of this park I have seen a huge specimen of *Philodendron pertusum*; also *Fourcroya interrupta*, *Dasylirocn acotrichum*, and different kinds of *Agaves* and *Cacti*. On the west side of the city is situated Garfield Park, then comes Douglas Park, and on the south side the most frequented South Park. All these parks are highly interesting and every one has its special attractions.

Mr. Dörl, the gardener of the Lincoln Park greenhouses, told me: "If you like to see rare

plants, go to Mr. G. Wittbold, Lake View." And so I did. One fine morning I started. I was in a great degree surprised when I looked this collection over and over again. I have never seen before such a variety of Aechmeas, Bilbergias, Tillandsias and many other Bromeliads as here. There the plant lover can also find a collection of rare Dracenas, Yuccas, Agaves, Cacti, Fourcroyas, Dasyliirions and other plants. The collection of orchids, though not large, is very interesting. A large mass of *Sobralia macrantha*, a very charming terrestrial orchid, attracted my attention especially. The large flowers were of a beautiful rosy-violet color. Among flowering kinds I noticed *Lycaste aromatica*, *Saccolabium ampullaceum*, *Dendrobium chrysotaxum*, *D. Parishii*, *Odontoglossum Alexandrae*, *Oncidium* (?), *Brasavola* (not labeled), *Cymbidium aloifolium* and others. Beautiful specimens of *Araucaria Bidwilli*, *Aucuba japonica*, *Raphiolepis ovata*, *Murraya exotica*, *Pittosporum floribundum*, many Palms, *Anthuriums*, *Marantas*, Ferns, *Caladiums*, *Philodendrons* are to be found here. Mr. Wittbold, although a plant dealer, publishes no catalogues. In the first place he is an enthusiastic plant lover, and many of his rare plants are presented by him to the public parks.

I intended to visit the celebrated orchid collection of Mr. Chadwick and the collection of Cacti of Mr. Schmidt, but I had not the time. Flowers and bedding plants seem to grow much easier and much more vigorous in the soil of northern Illinois than they do in and around St. Louis. In Oak Park, Austin, River Forest, River Side, and other beautiful suburbs of Chicago, one may see fine private gardens with lawns and flower-beds, ornamental shrubbery and fine street and lawn trees.

But St. Louis calls something her own that cannot be found in Chicago or elsewhere on this continent, namely, the widely known "Botanical Garden," better known as "Shaw's Garden." I am unable to describe this garden and its plant-houses justly. Hoping that some one else, better posted in the English language than myself, will describe the riches and attractions of this garden, I will only mention a few of the more interesting plants. On the right hand of the main entrance I noticed a beautiful red flowering magnolia (not labeled), and on the grounds many vigorous specimens of *Magnolia glauca*, large trees of *Magnolia acuminata* and *M. umbrella*. *Magnolia glauca*, with its pretty leaves and highly fragrant flowers, should be grown more extensively in our gardens. It is especially adapted for small gar-

dens, and looks very well in back of *Rhododendrons* and *Azalea* beds, and as single specimens. In a small tank the magnificent *Nelumbium speciosum* flowered. There were other aquatics (*Nymphaeas*) in flower, but they were not labeled. Very interesting is the large collection of Cacti planted out on a wall fronting to the south, and the very extensive collections of Agaves, Aloes, Yuccas, Fourcroyas, Dasyliirions and other succulents. In the houses I noticed very fine specimens of *Anthuriums*, *Philodendrons*, Ferns and *Ravenalia Madagascariensis* (Traveler's Tree of Madagascar), with large banana-like leaves. A very large collection of *Crotons* was planted out in the open air, also many palms, *Clerodendrons*, *Dracenas* and hundreds of other shrubs and plants. There were also good plants of *Imatophyllum nobile* in the greenhouse, the only species I saw. Shaw's Garden is worth traveling far to see its treasures, and it can not be done in a few hours; it takes days and even weeks to see all.

Mr. Brown, 1301 Lami street, has a very large collection of rare plants, especially palms. His palm-house contains about 120 different kinds of palms. There is a *Caryota urens* about 30 feet high, *Cocos Romanzoffianus* 20 feet high, *Licuala grandis*, probably the best specimen in the United States, *Elaeis guineensis*, a pretty large *Cocos nucifera* raised by Mr. Brown himself, *Ceroxylon niveum*, *Verschaffeltia splendida*, an extremely beautiful palm, and many small plants of rare species too numerous to mention. *Philodendron pertusum* (*Monstera deliciosa*), *Ph. bipinnatifidum*, *Ph. pinnatum*, *Anthurium Andreanum*, and *A. Scherzerianum*, just going out of flower, *A. crystallinum*, *A. grande*, *Maranta Porteana*, *Dieffenbachia Leopoldii*, *Dracena fragrans*, *D. Goldiana*, *D. Lindenii* and other not common plants could be seen here in fine specimens. I noticed also a very fine *Pandanus ornatus*, and *Cyano-phyllum magnificum*, a grand and beautiful foliage plant. The collection of orchids contains about 75 different varieties. A *Bambusa arundinacea* in the palm-house was about 40 feet high and extremely beautiful in appearance. There were some fine plants of *Zamia*, *Macrozamia* and tree ferns. Among the last I observed the very rare *Cibotium Chamissoi*, and among the commoner of the family several species of *Alsophila*, *Dicksonia*, *Lomaria* and *Blechnum Brasiliense*. The interesting Birds' Nest Fern, (*Neopteris Australasica*) was also there. I think Mr. Brown has probably the largest collection of *Nepenthes* in this country. They find their place

in the hot-house, a structure of their own. As the collection is very large I will only mention a few varieties, which attracted my attention more than others: *Nepenthes Mastersiana*, *N. ampullaria vittata*, *N. rubra*, *N. Meehaniana*, *N. Veitchii*, *N. atrosanguinea*, *N. coccinea*, *N. bicalcarata*. The temperature in this house in which also some ferns, anthuriums, etc., grew, was very high and the air humid and moist. Mr. Brown's out-door grounds can only be termed sub-tropical. The garden was decorated with fine specimens of *Pandanus utilis*, *Fourcroya gigantea*, huge *Agaves*, *Latania Borbonica*, *Arecas rubra*, *Seafortia elegans*, *Corypha Australis* and *Phoenix dactylifera*. A large and very fine collection of *Crotons* was planted around a large *Cycas revoluta*, supposed to be the largest specimen in the United States. (See July number, 1885, of the GARDENERS' MONTHLY, page 223.) Its measures are as follows: Height with tub 12 feet; the trunk is 7 feet high, by 4 feet 2 inches in the largest and 3 feet in the smallest place in circumference. I am much indebted to Mr. D. S. Brown, who courteously showed me his extensive collection of rare plants, and pointed out to me the most interesting specimens.

About one block east of Mr. Brown's residence we find another enthusiastic plant-lover, Dr. Arzt. His noteworthy collection of plants is extremely beautifully arranged. His conservatory is a glass structure, resting upon a grotesque foundation of rocks and stones from many parts of our country. Underneath this plant-house are grottoes and caves, all very artistically made. Among the stones are growing different species of *Cacti*, *Echeverias*, *Sedums*, *Yuccas*, *Agaves* and other succulents. The greenhouse, or conservatory as we may call it, contains mostly foliage plants, especially the fancy *Caladiums*, *Calocasias*, *Bilbergias*, *Crotons*, *Dracenas* and many others.

The smaller parks of St. Louis, such as Lafayette Park and Benton Park, can not be compared with the large parks of Chicago. They are similar to Union Park of the latter city. But the very large Tower Grove Park will certainly in a few years rival with Lincoln and Humboldt Parks of Chicago. We find in this park highly interesting landscape views, and when we consider that this park is only about twelve years old, we must say that much has been done in a short time. Here we find many trees that cannot be grown successfully in Chicago, and which add much to the beauty of this place, among which I mention the fragrant *Magnolia glauca*, the magnificent *Magnolia acuminata*, the spreading *Magnolia umbellata*, the large-leaved *Magnolia macrophylla*, the Tulip tree (*Liriodendron tulipifera*), *Platanus occidentalis*, *Ailanthus*, *Paulownia*, all used here with good effect.

Friestatt, Mo.

EDITORIAL NOTES.

A BLUE ANEMONE.—An Alpine species of Europe, *Anemone Apennina*, is said to be wholly blue.

SPECIAL ORNAMENTS IN FLOWER GARDENS.—In European gardens many old plants are used for novel effects. Last season, several prominent grounds had pyramids of wire covered by Ivy leaf *Pelargoniums*. The effect is represented as charming.

IMPROVED SWEET PEAS.—A race with crimson spotted flowers has been produced in Europe.

ABIES PUNGENS.—Probably the finest specimen under cultivation of the Blue spruce of the Rocky Mountains, is on the grounds of A. R. Whitney, at Franklin Grove, Illinois. It is 22 feet high, and 13 feet in the widest spread of branches.

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

Look out for a good stock of bedding plants in time, by striking cuttings of such things as grow rapidly, and sowing seeds of such annuals as may be advanced to advantage.

Fuchsias may now be readily struck from the

young growth of the old plants, which will make excellent blooming plants for the next summer season.

Dahlias should now be brought forward. A good plan is to shorten the extremity of the roots, put them in six-inch pots and place in a warm greenhouse. In a few weeks they will sprout

when they should be shaken out, divided with a piece of root to each sprout, and separately potted in four-inch pots.

Pansies are coming now into flower. They like an airy frame, where they will not be roasted in mid-day nor exposed to drying winds, and yet have a free circulation of air and plenty of light. Planted out in such a frame, and the old shoots cut away as soon as the plant has done flowering, they will keep healthy over till the next season. Superior varieties can be raised from seed. Choose those with the roundish petals, best colors, and the first flowers that open, to raise seed from.

Camellias will require rather more water while growing than at other times. Just before they grow is a good time to graft. Cut down the stock, cleft graft in the crown, wax, and plunge in a bottom heat of 70°. A great many kinds may be had on one plant by the bottle system—a shoot about to grow is obtained, and attached to the stock as in inarching, the end of the shoot being put in a small phial of water suspended beneath it. This plan does best, however, with half-ripe wood in July.

About this time the lamentable inquiry usually comes to the Editor, "What is the matter with my window plants? some of them have done very well, but this one or that one is yellow or sickly, and looks as if it would die." We have often been to look at the weaklings or sicklings, and have generally found them suffering from too much water or too much insect. But the former is generally the trouble in window plants. If the pots are badly drained, the water does not get away, and for healthy plants the soil must dry rapidly. If the plant dries so that it needs must have water at least twice a week, it is in a healthy condition. The plant should never have water when the soil is already damp.

But what to do with these sicklings? Take them out of their old pots, wash the roots, trim the weaker branches, and put into as small a pot as the roots can be forced into. Let it remain there till by good growth it shows it has good healthy roots, then it may have more earth in a little larger pot.

COMMUNICATIONS.

PALMS FOR A LADY'S CONSERVATORY.

BY ALFRED WARNE.

In answer to your correspondent, "Mrs. J. G. M.," regarding palms and ferns, I would say that

as this lady's conservatory is very small, I will only name those that are distinct and easy of cultivation, and not very expensive:

Palms.—*Latania Barbonica*, *Kentia balmoreana*, *Phoenix rupicola*, *P. reclinata*, *Rhapis flabelliformis*, *Seaforthia elegans*, *Euterpe edulis*, *Corypha Australis*, *Chamaerops excelsa*, *C. Fortuni*, *Areca Verschaffeltii*, *A. lutescens*.

Ferns.—*Pteris argyrea*, *P. serrulata*, *Platycerium alcicorne*, *P. biforme*, *Polypodium aureum*, *Nephrolepis davallioides*, *N. exaltata*, *Onychium lucidum*, *Lomaria gibba*, *Microlepia hirta cristata*, *Gymnogramma chrysopylla*, *Davallia Mooreana*, *D. dissecta*, *Asplenium Belangerii*, *Adiantum cuneatum* (Maiden hair), *A. trapeziforme*, *A. scutum*, *A. gracillimum*.

The above mentioned ferns are all distinct, sterling varieties, and all easy to grow where there is heat, with the exception of *Microlepia hirta cristata* and *Davallia dissecta*. These two require a somewhat temperate corner.

Gardener to Mr. C. H. Clark, West Philada., Pa.

THE RED SPIDER—SO CALLED.

BY A. VEITCH.

At a meeting of the Society of Florists in Cincinnati one of the speakers is reported to have said, when the subject of plant enemies was under consideration, "That it is customary to abuse and misuse the weak. This is the case with that small but beautiful insect, the red spider. Like other spiders it is carnivorous and never ate a plant in its life. Microscopic insects come to live upon the plants, and the red spider to live upon them. It is a friend, not a foe."

This statement we regard as made up of fact and fiction in about equal parts. It is true that the spider is carnivorous and is in no way dependent upon plant food for subsistence; but the creature referred to here is not a spider, but an *Acarus* or mite, and lives exclusively upon vegetable products. In zoological classification they both belong to the class *Arachnida*, but the mite is in the order *Trachearia*, the spider in that of *Pulmonaria*. The function of breathing in the two orders is different. In the mite it is performed by air tubes distributed through the body, whilst in the spider the air is admitted by spiracles situated on the abdomen, and which are lined by a membrane plaited into numerous folds, which resemble gills. On these characters is founded the sub-division of the class into pulmonary and tracheary *Arachnida*.

But apart from all technicalities any one with a good pocket lens might satisfy himself that the pests of gardeners differ in important particulars from the spider. The head and breast, or thorax, of the spider is connected with the abdomen by a slender cord, as in insects. It has eight eyes, and the same number of legs, besides two short arm-like projections, or palpi, with which to catch and to hold its prey. The body of the mite is not so divided; is somewhat oval in form and tapering to the head, which is terminated by a syphon or sucker, with which to extract the juices of plants. It has six legs, but by undergoing a transformation similar to insects an extra pair is not unfrequently acquired. The body is transparent, with dark vein-like ramifications along the back which we take to be the trachea. The aged females only are red, which may have given rise to the popular name by which they are known. They spin webs, but not so artistically as spiders do, as they seem chiefly designed for nests, or, when the workers are unmolested, convenient residences for large communities; whereas the web of the spider is not only a snug retreat in times of danger, but a base from which to operate against enemies as well as a snare to entrap unwary flies or other creatures upon which it feeds.

New Haven, Conn., Dec. 1st, 1885.

RANUNCULUS AND THEIR CULTURE UNDER GLASS.

BY J. F. CLARK.

Ranunculus comprises an extensive genus of herbaceous plants, giving name to the order *Ranunculacæ*, better known as the Buttercup—Crowfoot. In this order we have many other beautiful plants, such as the *Clematis*, *Anemone*, *Delphinium* and *Pæonia*. I will refer here only to the cultivated species of Buttercups, *Ranunculus Asiaticus*, which afford the endless varieties of *Ranunculus* grown by florists, namely: The Turkish, Persian, and the double French. The above may be classed as tender herbaceous. Some of the varieties are truly magnificent, and when well grown the flowers will measure from $2\frac{1}{2}$ to 3 inches in diameter. The flowers will last from ten days to two weeks in perfection. Their season of blooming is from March to May. For symmetry of form, and brilliancy of color in almost all of the hues known among flowers, the *Ranunculus* is probably unequalled by any other. For pot cultivation, use one-third well rotted cow manure, one third good garden mould, to which a

little sand may be added. In potting, use five-inch pots. Three tubers may be placed in each, near the edge, and then covered with one-half inch of the soil above recommended. As the tubers when received from the seedsman are dried and wilted looking, it is best to sprinkle and keep moist eight or ten hours before potting, otherwise they are apt to push themselves out of the soil when watered. After potting and watering, they should be placed in a cool, moist place, near the glass, and watered carefully until they start to grow. Keep a lookout for snails, for, like the peach borer, they have a "soft place in their heart" for the root. The secret of success with *Ranunculus* is in keeping them cool until the flower stems show four or five inches above the foliage. The night temperature should not exceed 45° to 50° . At this stage, it may be increased to 60° , or 10° more by day, with sun. They require plenty of air on all favorable occasions. Before the flowers expand they should be supported with light sticks. Like many other flowers, the Buttercup will close up at night, and if kept in the dark will not open. Therefore give plenty of light at all seasons. After the flowers have decayed, the plants should be thrown away, as good tubers are easily and cheaply obtained. It will not pay to keep them over for next year's blooming.

Maud P. O., Bucks Co., Pa.

VARIEGATA FICUS REPENS.

BY MANSFIELD MILTON.

Last June, when visiting the Cambridge Botanic Gardens, Massachusetts, Mr. Manda, the Superintendent, showed me a sport of *Ficus repens*. It is beautifully variegated with white; not a dirty white as often seen in variegated leaved plants, but a clear striking white. About half the foliage was white, giving it sufficient to make it attractive. For decorative purposes, this will make a suitable plant; either grown into large specimens neatly trained, or grown in small pots, it can be kept in a compact bushy form, and will answer the same purpose some of the *Selaginellas* are now used for.

With sufficient to cover the back wall of a fernery or orchid house, what a beautiful object it would make. It appears to grow just as strong as the type, and retaining its variegation as perfectly as any variegated leaved plant. What Mr. Manda intends doing with it I know not, but it should in some shape be offered to the public, so that all can get a chance to enjoy it.

Youngstown, O.

NOTES FROM THE WHITE HOUSE AT WASHINGTON.

BY M. H. LESTER.

I was just in time a day or so ago at the White House conservatory to see President Cleveland. Not the President himself, but a beautiful *chrysanthemum*, pure white, raised by Hallock & Thorp, and named for, and presented by them to, the President. It is a beauty.

Things are well done here. Crotons look good; also Rex Begonias. *Begonia rubra*, *Hendersonii* and *Metallica* are in large quantities for decoration and cutting from. *Medinilla magnifica* in bloom is a fine thing for this season of the year. *Pancratium ovatum* is a fine thing—eleven flowers on one spike. *Centradenia grandiflora* ought to be in every greenhouse for winter blooming. I most particularly admired two fine specimens of *Phænicophorium Sechellianum*, and a *Vanilla aromatica* with beans on. *Lælia anceps* will shortly make a good show. At the Botanic Gardens is the best plant I ever saw of *Ravenelea speciosa*, which is the same as *Urania Madagascariensis*. Also nicely in bloom is *Lælia peduncularis*, *Oncidium tigrinum* and *Odontoglossum Bictionensis*. *Odontoglossum ornithogalum* is not half so much grown as it ought to be. It makes so much flower, and its aromatic perfume is agreeable to most people.

THUNBERGIA HARRISII.

BY EDWARD NORMAN.

Why do not more gardeners grow *Thunbergia Harrisii*? I think everyone will agree with me when I say it is the best stove climber there is. It always looks nice, even when not in flower; and at this time of the year, when the stove is looking dull, its large clusters of pale blue *Gloxinia*-like flowers attract the attention of everyone that comes in the house. The plant we have in our stove, was planted out last February. It was then about 2 feet high. It was planted close by the hot-water pipes, in some good soil consisting of two parts loam, one of peat and one of sand, with a good sprinkling of bone dust. The plant soon began to grow, and by August it had nine good stems 25 feet long. We then stopped them, and kept all lateral wood pinched off. About the middle of November the flower spikes began to make their appearance, and now we have a fine show of over one hundred and twenty spikes in flower. Last July a spike came out from the main stem, and has kept on blooming ever since.

There have been about seven hundred blooms on that one spike, and it is still blooming. The spike is now 2 feet 10 inches, with a branch spike of 2 feet. No doubt some people will think that is a large spike, but when it is done blooming, I will send it to the Editor of the *GARDENERS' MONTHLY*. I do not know how many more months that will be, for I see that there are more spikes coming out of that one. I think any one trying this old favorite, will not be sorry for doing so. It does best planted out, and trained on the roof of a hot-house, giving each stem a different wire or string, and keeping all lateral wood pinched out. I prefer string, as it is more easily taken down, should it at any time want cleaning; but if the syringe is kept at work when not in flower, I do not think it is much bother to keep it clean. *Lee, Mass.*

[We asked a good gardener once, why he did not grow *Thunbergia Harrisii*? "Too much bother," he replied, "to keep it clean of red spider." But with the free use of the syringe, as Mr. Norman uses it, there will be but little trouble from this pest.—Ed. G. M.]

FIRES AND STEAM HEATING.

BY REGILLIWRET.

Would it not be better, in giving number of feet heated, either by flue, hot water or steam, to have it always understood to be "cubic feet?" These can be readily ascertained, no matter what the shape of the roof. The rule for heating by hot water, is "one foot of 4-inch pipe to three or four square feet of glass in the house (roof, side and ends)." While by steam the rule is, "one square foot of radiation, (say two feet, 2-inch pipe,) for thirty, forty or fifty cubic feet of air, according to the temperature (outside) of where the house is located." North, less number of cubic feet; South, greater number of cubic feet.

In making comparisons of heating, by either method, the location and degrees of outside temperature must be taken into consideration, also the attention paid to firing.

A great many seem to think that firing, is simply "firing" on coal and taking up ashes, but it is more than that. To maintain a proper fire, is an art that most of us seem to forget, or have never learned.

Now, if steam is much the better heating medium for dwellings, stores, halls, &c., where humanity dwells; is a more gentle, equable temperature, easier controlled, less attention required,

more economical, why will not these points hold good for its use in heating houses for living plants?

My experience with steam and "Dunning Boiler" (self-feed), for the past two seasons, does not make me wish to change back to hot water, which I used ten seasons. *Jan. 4, 1886.*

NOTES ON ORCHIDS.

BY EDWARD NORTON.

Last spring some one wrote to the GARDENERS' MONTHLY, concerning *Cypripedium insigne* having two flowers on one spike. This year we have two spikes of *C. Spicereanum*, and three spikes of *C. Harrisianum* bearing two flowers on a spike, and all large fine blooms. The *Spicereanum* here does remarkably well; small plants in four-inch pots having five and six fine large blooms upon them, and one plant in a seven-inch pot, has a dozen flowers now open. At the time I am writing (December 2d), we have sixty-seven fully expanded blooms, which together with *C. niveum*, *Lawrenceanum*, *Stoneanum*, and *Harrisianum*, with about two dozen *Phalenopsis amabilis*, a *Vanda Sanderiana* with a spike of eight flowers, a dozen and a half spikes of *Calanthe Veitchii*, *vestita* and *vestita lutea*, give Mr. De Witt Smith's East India house quite a lively appearance.

Lee, Mass.

BAD PUTTY.—A CAUTION TO FLORISTS.

BY E. HOLLEY.

During the month of September I built a carnation house 46x21 feet, and glazed it with 10x12 double-thick glass, put in the 12-inch way. The glass and putty I purchased in New York, of a firm who make quite a point to supply florists with the above materials. The glass was satisfactory, but the putty, if such it could be called, proved to be the vilest stuff any one could imagine, although it was bought for a first-rate article, and said to be made from pure linseed oil. The weather being warm, the putty worked very well. My glazing was done in the very best manner, the sash bars and rafters having been given two coats of good paint. As soon as the frost began to appear the putty began to bulge out from under the glass, and now, January 4th, very much of it is laying on the sash bars, or having dropped off upon the plants or ground. Had I used blue clay fresh from the bank, I would have been in just as good shape as I am now. There is no adhesion to the putty. By taking it in your hand and rub-

bing it even slightly it has the appearance of whitening and water. Last year I built just such a house as the above, glazed it in the same way exactly, and the putty is as perfect as the day it was put on, but the putty was purchased from another firm. I will have to submit to the unpleasant state of affairs until warm weather, and then take out all of the glass and reset them, which will be quite an expense, and all from being deceived in the quality of putty. Should not the party furnishing the putty which has been the cause of this misfortune be held responsible for the additional expense? If there are any florists about the country who have been caught in the same way, I would like to hear from them, and any one wishing to know who the parties are that sold me the putty will be informed by dropping me a line. If there was any oil used in this putty, and there did appear to have been, it must have been of such a nature that the least touch of frost decomposed it. Will some one explain how this putty is adulterated?

Hudson, N. Y.

[We do not know what the law in relation to adulteration is in New York, but in many states it would be an indictable offence.

As a general rule law is expensive, and it is better to suffer in silence than to enter into it. Some day there may be associations into which one may enter, employing counsel where the good of one happens to be the good of the whole, which could take up such things. Florists should have one.—Ed. G. M.]

AN ECONOMICAL PLANT HOUSE.

BY MRS. J. S. R. T.

I have increased my area of plant houses, and as economy was my very first consideration, I searched and read diligently every thing bearing upon that point. It is too soon to speak decidedly, but so far what I have done has worked admirably. I wished to secure a house, strong, air and water tight, no effort being made at show or ornamentation, and feel I have, at a slight cost, secured a house where my plants will be entirely secure without artificial heat of any kind. My new house is 15x35 feet, excavated full four feet of earth; above ground, sides 3 feet; glass entire, span roof, each side 7½ feet long. Not feeling able to purchase hot-house sash, I obtained on reasonable terms, many window sash, which from being nailed in position cracked the old hardened putty so that it leaked very badly. But I had a rem-

edy at hand, (found in a recent number of *Am. Florist*), which now works well. I used one-third each of putty, boiled linseed oil and white lead. Oil and putty mixed first, adding lead to thin, then strain. I had no Scollay-sprinkler, and substituted a pint kerosene oil can. Think an oil can with spring bottom would have been better. With this it was rapid work to pass over every particle of the old putty, pouring in liberally where badly broken. This was done in fair weather, which lasted until this mixture had hardened; followed on the fourth by a regular equinoctial gale, hard beating rain, a furious tempest, when to my gratification the sash only leaked in four places. This was gone over again, and now it is water tight.

As an added means of warmth and protection, I have had a coarse white homespun awning added. It took 115 yards, $\frac{3}{4}$ yard wide, to make—in four sections, each with pole tacked to its lower edge, to roll upon as awnings to business houses are done. To render transparent and water proof, I used a receipt found in an old number of *Am. Agriculturist*, viz.: 1 qt. pale unboiled linseed oil, 4 oz. resin, 1 oz. sugar of lead, pulverized; heated in an iron pot, applied warm and let dry; give second coat.

This cloth has its upper edge tacked securely under a roof-like projection, over ridge pole (made to protect cloth when rolled up), having previously screwed into ridge pole rings 1½ in. diameter, where it was secured strongly with small ropes, which lay directly on the glass, until the cloth was tacked in desired position. Then it was returned to top and passed again through same ring, from thence along under roof projection and through similar rings until end of house is reached. A gentle pull suffices to start the pole to rolling and continued effort lands it safely under the projection. So far so good. But how will I manage to get it to start back? So thus far gentle persuasion has not sufficed, and each time my man servant has to mount step-ladder at each end and give it a vigorous push to dislodge it. But this takes time and patience, and I would like to be told how to get it down as easily as we get it up.

I think cloth manipulated this way, would give to many, unable to indulge in artificial heat, or glass for hot beds, a safe and sure means of having as many cold frames for half hardy plants, for advancing tender vegetables, &c., as they desire, and here South, almost as good coverings to their flower pits as glass. I intend to test it in

a large violet frame, 4x20 feet long, to have them the whole winter, removing cloth in summer and allowing violets to remain all the time.

Spartanburg, S. C.

TEA ROSES, PAUL FLORET AND ROSALIE.

BY MANSFIELD MILTON.

For bedding purposes or as a pot plant I do not know of a more floriferous variety than Paul Floret. The flowers are large, full and very fragrant, produced generally singly on the end of every shoot; and as the plant has a very bushy habit there are a great many shoots, and consequently an equal number of buds. Upon a number of plants I have growing in my rose bed I find but few blind shoots, that is, shoots which stop growing without forming a bud. The color is a reddish-salmon with carmine centre.

Rosalie.—This beautiful production of Ellwanger & Barry, although a miniature rose, is a little gem and should be found in every one's garden. The flowers are a rich rosy-pink, produced in great abundance and forming for a pot plant a compact bushy habit; with me it has been very free from mildew.

Youngstown, O.

EDITORIAL NOTES.

FLORISTS' DESIGNS AT STATE FAIRS.—At State Fairs the "Fat Woman," "Educated Hog," and similar monstrosities are the side issues that usually attract the multitude, and add to the totals of "gate money." The *London Gardeners' Chronicle* quotes from our excellent young contemporary, the *American Florist*, its account of a set of "floral designs" of the side show order at one of our State Fairs, and suggests that the *Florist* has evidently an up-hill task in educating American taste in such matters.

The *Chronicle* does not know that these premiums were offered by an Agricultural and not by a Horticultural society. It is not usually regarded as the mission of an Agricultural society to educate Floral taste. That should be work for a Horticultural society. But even Horticultural societies are often remiss in their duty in this respect.

THE LARGEST CYCLAMENS.—The largest Persian cyclamen flowers ever produced in Germany, were exactly two inches long. We believe we have seen them this size in America.

SPOTTED GLOXINIAS.—A race of Gloxinias with beautifully spotted flowers is among the recent novelties offered by the seed trade.

NEW TEA ROSES FROM AN ENGLISH STAND POINT.—This is the view that a correspondent of the *London Gardeners' Chronicle* takes of new Tea Roses:

During the last few years many new Tea roses have been introduced, but some of the best of the old varieties are so popular that they will hold a high position for years to come. Niphetos, for instance, as a white kind, is not yet equalled. Devoniensis still reigns supreme in its lovely color; Madame Falcot and Safrano are most beautiful in the bud state; Souvenir d'un Ami, too, has long been popular, and its popularity has not declined. Still, with all the good qualities belonging to these good old varieties, we cannot ignore the new and beautiful forms which have been so lavishly distributed in recent years. The best of them are Anna Olivier, flesh color; Amazone, lemon-yellow; Belle Lyonnaise, Catherine Mermet, flesh-colored or salmon-rose; Comtesse de Nadaillac, orange and coppery-colored; Hon. Edith Gifford, beautiful in bud; La Boule d'Or, a fine pot rose, golden-yellow flowers; Madame Jules Margottin, yellow with a pinky tinge; Madame Chedane Guinoisseau, sulphur-yellow, fine form; Madame Lambard, very distinct; Marie van Houtte, a very pretty yellow kind; Perle des Jardins, canary-yellow; Rubens, white, rose-tinted, fine. The above are not strictly new, and we must add to them the lovely Souvenir d'Elise.

SCRAPS AND QUERIES.

REINE MARIE HENRIETTE ROSE.—"Geyser" says: "If 'J. H.,' of Ardmore, Pa., will treat his 'Reine Marie Henriette' the same as a Lamarque, or M. Neil, he will have plenty of blooms and two crops each year. I have two, one in house facing south, on back wall; one in house, span roof facing east and west; both are doing finely, and bloom profusely, the latter has had many a crop of 300 and 400 blooms. It is a fine rose—good color—but lacks much fragrance."

STEAM HEATING.—Mr. N. B. Stoeve writes, that he calculates the number of feet of glass by the number of feet in the boxes used for glazing. To Mr. Hippard's houses 250 boxes were used; in this way he calculates 12,000 feet. The way in which the glass is used would enable 25,000 feet to be used in this way instead of 12,000. He believes that the proper way to understand "feet of glass" is by the number of feet of glass used, and not the amount of ground covered by glass or the number of cubic feet enclosed by glass.

In regard to the price of coal, Mr. Hippard pays by the car load for slack 80 cents per ton, and is delivered in the bin at the establishment at from 20 to 22, costing just about \$1, and not \$1.25 as stated by "Ohioan."

Mr. Stoeve further suggests that if lump coal is the cheapest, as "Ohioan" believes, one might suppose the Youngstown works would use it for their steam boilers.

We have had to condense Mr. Stoeve's letter because much of it has not reference to the matter of what is to be understood as "feet of glass" in calculating the work of a steam boiler, which was the chief question raised in our columns.

CHRYSANTHEMUM, MRS. J. B. WILSON.—Mr. Walter Coles, Claymont, Del., writes: "I have sent you to-day, per mail, one bloom of my new Chrysanthemum (Mrs. J. B. Wilson). Will you kindly give your opinion on it as to its merits in GARDENERS' MONTHLY? You will see by the weak stem that it is a flower from a side shoot, hence the flower is not near so large nor has it the substance that it would have from a main stem. This is really a valuable variety for Christmas."

[This is of the semi-double class, with a flower $5\frac{1}{2}$ inches over; petals, $2\frac{1}{4}$ inches long and $\frac{3}{8}$ inch wide, with the single eye $\frac{7}{8}$ inch in diameter. Color, white, with a faint tinge of pink. It is a very fine bold flower of its class.—Ed. G. M.]

NEW TEA ROSE, "MOONLIGHT."—We received recently a flower of a sport from Catharine Mermet, which was as large and perfect as the original, but of a soft subdued satiny tint that was neither white nor pink. There have been several sports from this rose recently, and just how far this may differ from them we cannot tell. If they are like this, "superb" will be the characteristic term.

The name pre-empted by the raiser of this is very appropriate as coming after the very popular "Sunset" of Mr. Peter Henderson, as well as from the more subdued shade of color that separates its "glamour" from the parent form. We should recommend its propagation, leaving the question of distinctness to future revelations.

ORCHID QUERIES.—"J. R., New Bedford, Mass., writes: "You will oblige me very much by letting me know through your journal if Cypripedium acaule has ever been crossed by any of the tropical varieties, if so, what are the hybrids? Would like to know most easy way to get a stock of Anthurium Warrackianum and the easiest mode of propagating it. Will Cœlogynes do better in pans than baskets or blocks? Can I flower

it better in hot-house than cool, as I have been in the habit of flowering it in cool house?"

[There have been no attempts recorded to use *Cypripedium acaule* in hybridizing orchids.

Cœlogynes do best in pots of peat and moss; a

very few do well on blocks or in baskets, but even these do better in pots.

Can some correspondent answer the query in regard to propagating *Anthurium*? We suppose division is the only way.—Ed. G. M.]

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

Nothing in gardening is so ill understood as pruning. Those who preach prune not at all, have no doubt seen some fearful illustrations of bad work. Those who advocate pruning whenever the knife is sharp, have been taught in the miseries of some neglected orchard. It is indeed safer to prune not at all, than to have a sharp knife in the hands of an ignorant man. Much of the indifference the culture of the dwarf pear has fallen into, came about from the bad mistakes of ignorant pruners. It is not at all uncommon to see a dwarf pear tree with all its young vigorous growth cut away. Nothing but fruit spurs left. All the force is thus sent into the flowering condition in the spring. The trees are mountains of snow-white blossoms; but few fruit follows. A judicious thinning out of weak branches, so as to get a good form to the tree, is about all the pruning required. If there is a tendency to produce an over-proportion of fruit spurs, cut out a good portion of them.

The apple often requires pruning when somewhat advanced in years. The old stunted branches should be cut out now and then, whenever a young and vigorous shoot is inclined to take its place. Peach trees especially love this sort of pruning. The grape-vine, when trained on lattice work or trellises, is very liable to have its strong branches at the end of the vine; and the good pruner is ever on the alert to get a young strong branch up from near the ground. When he can get this, he often takes out an older one weakened by age or bearing, and replaces it with youth and vigor.

The rule in pruning grape-vines, is to shorten the shoots in proportion to their strength; but, if the advice we have given in former summer hints has been attended to, there will be little disproportion in this matter, as summer pinching of the strong shoots has equalized the strength of the vine. Those who are following any particular

system will, of course, prune according to the rules comprising such system. As a general rule, we can only say, excellent grapes can be had by any system of pruning; for the only object of pruning in any case is, to get strong shoots to push where they may be desired, or to add to the increased vigor of the shoot, which pruning supposes will follow the act, increased size in the fruit it bears.

Blackberries, raspberries and currants are also much assisted by having the weaker canes thinned out, and those left shortened a fourth or fifth of their length. Gooseberries need thinning, but not shortening.

If time can be spared for washing the trunks of the fruit trees, it is so much the better. It prevents them from becoming hide-bound. Hide-bound trees are often started by poverty or unsuitable soil. Few soils can be too rich for fruit trees; if fertilizers can be had cheap most orchards are benefited by manuring. If the ground beneath the trees be cropped with vegetables or farm produce, manure must be applied. The trees then get some as well as the vegetables. If grass is grown under the trees, unless the land is alluvial, and some food is brought down from the higher land, surface dressing should be given every other year. It is an excellent plan to have orchards in grass, provided care be taken not to let the grass starve the trees.

If one has a specimen orchard of many varieties, in addition to the main one of a few varieties for main crops, he will have much pleasure. The trees are, of course, numbered regularly, and named in the orchard book in case a label gets lost. But each tree is labelled for all. Look over at this season, and see that all labels are legible.

As to vegetables, we cannot do anything without deep soil, and plenty of manure, which the good gardener will always be on the alert to secure.

In the vegetable garden we have few hints to

give to those who grow for profit. Few seldom go into the vegetable business until they have had some amateur experience, and after this they know how to make money better than we can tell them. But the amateur may be benefited by what we say, and he can go into the profitable line afterwards.

In managing the vegetable garden, the highest excellence should be aimed at. This is the chief source of pleasure in a garden. If one can take no pleasure in his garden; if the watching of the beautiful processes of nature in furnishing him food, and the many lessons they offer to teach, and which he in a thousand ways can so pleasurably and profitably apply, have no charms or attractions for him, he had better give up gardening; for, assuredly, in most cases—even to ninety-nine in one hundred instances—the market gardener will bring the vegetables to his own door cheaper than he can grow them. Amateur gardening should primarily be pursued for the lessons it teaches, and the pleasure it affords. When it ceases to do this it should be abandoned.

COMMUNICATIONS.

LIME-WASHING FRUIT TREES.

BY H. F. HILLENMEYER.

I have been a reader of the GARDENERS' MONTHLY for many years and have often noted your advice to whitewash the stems of fruit trees. From other writers I have gathered the idea that whitewash "closed the pores" and was highly injurious. Whether to whitewash or not was thus a debatable policy. Three years since, to determine definitely whether such an application would prove beneficial or injurious, one hundred three-years-planted apple trees were selected for the experiment, the wash being applied about June 1st. It has been applied twice since with the most gratifying result. The stems of the trees bear the gloss of exceeding vigor. There is no sign of moss or lichen, no scale, scab or borer.

I have used other washes to achieve the same result, but neither soft soap, potash or soda washes impart such a splendid hue of health.

Mr. Editor, continue your teaching. It is correct, and those who follow it will be pleased with the result. The only point upon which I differ is in the addition of soot, etc., to soften the color of the wash. We use only the lime and a little gypsum to increase the adhesiveness. The clear white reflects the heat and decreases the tempera-

ture in the stem, the most vulnerable part of a tree. It is true that the color is "glary," but then the "new" soon wears off. In fact, the wash entirely disappears in three months. The wash with tempered color may be quite as good, but the result here with pure white has been so gratifying that save in conspicuous places I should hardly care to do "better."

Lexington, Ky.

[It often happens that people who despise those who study "Botany" as an aid to horticulture, and know absolutely nothing about vegetable physiology, will talk the most learnedly when it is to bolster up some fancy. It would be hard for these sturdy brethren to explain what they mean by "closing the pores" in the stem of a tree.

Some years ago a gentleman near Cincinnati obtained or applied for a patent for an improved method of culture in fruit trees. The writer of this saw the trees treated to Bolmar's process. It consisted simply of hauling a cart load of earth and banking it up under the trees, surrounding the trunk with the earth up to the first limbs. The trees looked a lady dressed in the not very old-time style when monstrous hoops made up the fashion of the day. It was amazing how great was the vigor and healthfulness of these trees, although the earth of course "closed every pore" in the trunks.

And then how terribly must a cutting of a grape vine or other plant suffer with "every pore" beneath the surface of the ground!—Ed. G. M.]

FRUIT AND FLORAL NOTES.

BY ROSE TERRY COOKE.

I observe that you and your correspondents frequently have something to say about the peach curl. Allow me to contribute a little bit of my experience.

Last year I bought of Ellwanger & Barry some strong thrifty young peach trees, and set them out properly, for though I am an amateur, I know enough for that. They all flourished, but about mid-summer the leaves crinkled up, and had unmistakable 'curl' all over. I have great faith in wood ashes, and as we use a wood burning furnace, have plenty of them. So I had the ground about each tree well mulched with them, and slightly forked them in. The effect was surprising; in a very short time all those curled leaves straightened out, grew fresh and strong, and never had another bit of curl to them all summer. I find wood ashes very good for currants. I have almost exterminated the currant

worm from my bushes by an abundant mulch of this kind; and my raspberries grow enormously under the application of wood ashes every fall and spring.

What is there about *Rosa rugosa* to make it desirable? I paid a dollar for one, on the recommendation of catalogues, and I think any of our wild roses more beautiful than this bristling, single blossomed, coarse-leaved bush.

I have been experimenting on various strawberries, and accepted two out of the crowd for my own use, the old *Triomphe de Gand*, and the new "*Prince of Berries*." The latter is a sort of idealized apple, it is so firm-fleshed, so high-flavored and so sweet. But I had to prop up the long stalks as if they were over-loaded apple trees. I never saw such growth of leaves and fruit on any other berry.

Now that the season of catalogues is coming in, do give a word in season to those believing people who are every year cheated by travelling agents of various florists. My neighbor last year paid one a dollar for one feeble plant of *Ampelopsis Veitchii*, while I sent to a florist and bought five for a dollar. This is but a specimen of the various frauds of this sort. I too was victimized last year by an "old soldier," a plea I never can resist. I paid for blackberries with the roots torn off, pear trees that apparently never had those useful attachments, and sundry other dead branches, the aspect of which not only shocked my patriotic sentiment, but put a final blow to my patience with "agents." Not another one will come inside my door.

[The Editor once heard just this vow made over a bill for \$96, when not \$9 had been expected. The vow was registered in the editorial mind. Inquiry was made, and the reply was this: "Confound those fellows, one got an order for grapevines out of me this spring." But the vower was not a lady. Still, we shall be glad to learn when her good nature yields to the blandishments of the agent's mellifluous tongue.—Ed. G. M.]

I get everything far cheaper and far better, by express or mail, from established and honest firms, who deal in flowers and fruits "in the original package." *Winsted, Conn.*

EDITORIAL NOTES.

CLEANING SCALE FROM FRUIT TREES.—In our own practice we found nothing better than linseed oil for cleaning bark of scale, but some have com-

plained that it killed their trees. Perhaps where there is this risk the following from the *Gardeners' Chronicle* may be preferred:

"Now is a good time for cleaning any trees that may be infested with scale or mealy-bug. The following mixture may be used:—2 oz. of flower of sulphur, 2 oz. of soda, $\frac{1}{2}$ oz. of shag tobacco, and a small quantity of lime, put in a saucepan and boiled in a gallon of water for a quarter of an hour. Allow it to settle, pour off the clear liquid, and therewith syringe the trees well once or twice during the winter. It will keep good for any length of time. I have also used paraffin mixed with water, say a wineglassful to a gallon of water. This will clean the trees if repeated while growth is at rest. Another plan that I have found to answer, is to syringe the trees four or five times with strong manure water as collected in a tank from the cow-shed."

RASPBERRY, HILBORN.—This is a new Black cap raised in Canada, and said to be of "very superior flavor," and as large as any now known.

PRUS POLLWERIANA.—Every now and then we have references to this famous French pear, that is supposed to be not a pear, but a hybrid between the pear and some other genera; and the only reason for this supposition was that it was sterile—never had any seeds in the fruit. It is now well known that sterility is no mark of hybridity. Hybrids are as fertile as other plants. Seedlings not hybrids are often infertile. But the actual facts are now furnished by the *Revue Horticole* for September 16th. Some seeds have been produced and plants from them are nothing but the ordinary common pear.

PEARS IN THE OLD WORLD.—At the recent Pear convention in London, there were 6,350 plates of fruit, and 650 varieties. 194 persons had *Beurre Diel*, *Marie Louise* 155, and *Louise Bonne de Jersey* 732, *Beurre Clairgeau* 106, *Vicar* 78, *Beurre Superfin* 70; our favorite *Bartlett* or *Williams Bon Chretien* is in the unnoticed list that had less than fifty admirers.

APPLE TRADE WITH EUROPE.—The *Pall Mall Gazette* says that the American apple trade in London is so enormous that a single dealer will think nothing of having consigned to him "80,000 barrels by next train." Is this a newspaper exaggeration?

RESISTANT VINES.—In California and some other parts of our country the European grape does fairly well, though everywhere the dreaded insect, *Phylloxera*, may possibly come. We suppose it is pretty close at hand, even in the hitherto exempt California, for we note that a leading

California grape grower, our well-known friend, George Hussmann, of Napa, is propagating the "American" kinds largely, and gives them the very expressive name of "Resistant" kinds, a name that deserves general adoption.

THE BERCKMAN'S GRAPE.—It remained for this magazine to point out the excellencies of this variety, long after the death of Dr. Wylie its raiser. It is a pleasure to note the increase of popularity that it so well deserves.

THE CUTHBERT RASPBERRY.—This variety which has obtained a strong hold in the favor of customers, was found about fifteen years ago, as an accidental seedling in the garden of Thomas Cuthbert, Riverdale, on the Hudson river, New York.

THE BARTLETT PEAR.—The Editor has made a misstatement as to the Williams who introduced the Bartlett, or as it is in England, known as the Williams' Bonchretien. Mr. Hovey kindly corrects the error in the following note to the *Rural New Yorker*:

"It was originally described in the Transactions of the Royal Horticultural Society in 1816 (Vol. II.) with a colored plate, and so far as any information could be obtained at that time, 'it sprang up from seed in the garden of Mr. Wheeler, a schoolmaster at Aldermaston, in Berkshire, previously to 1770, as it was then a very young plant.'

"It was disseminated by Mr. Richard Williams, a nurseryman of Turnham Green, from whom came its name of Williams's Bonchretien. It was introduced into Boston in 1799 or 1800, into the grounds belonging subsequently to E. Bartlett, then Roxbury, and was known as the Bartlett Pear, supposed to be a new variety until the late R. Manning, of Salem, detected that the Bartlett was a synonym; but it was so extensively cultivated as the Bartlett that it was impossible to restore its original name."

PICKING BLACKBERRIES.—In his essay before the American Pomological Society, Mr. Granville Cowing, of Muncie, Indiana, made a good point in noting that the fruit of the Blackberry should be kept in as dense shade as possible, from the moment of picking to getting to market.

SEASON OF RIPENING PEARS.—An English grower of a hundred kinds, has been keeping careful record of exact ripenings, and of those well-known in our country, the Giffard was the earliest and Olivier des Seves the latest. They run in order as follows: Giffard, S. du Congress, Bartlett, d'Amaulis, Flemish Beauty, St. Michel Archange, Superfin, Fondante d'Automne, Duchesse, Louise Bonne, Seckel, Urbaniste, Bose, Diel,

du Comice, Winter Nelis, Glout Morceau, Josephine de Malines, d'Espercu, Easter Beurre, and Olivier des Seves.

THE CHINESE YAM.—An English firm, in a catalogue "expressly designed for the American market," asks, "has any American grower ever tried this?" Shade of Billy Prince, what a question! Still, as it is getting to be the fashion to look to the old world for "novelties" there will no doubt be a good run for it. The only satisfaction is, that it will create a good demand for American post spades in order to dig up the crop.

COE'S GOLDEN DROP PLUM.—This was discovered in England first by an English gardener named Gervais Coe, at Bury St. Edmunds, in Kent. It is now getting to be an old variety, but still holds its fame and maintains its reputation.

THE ENGLISH GOOSEBERRY AT HOME.—Few of our readers can have any idea of the enthusiasm with which a resident of Great Britain views a gooseberry bush. At Cawdor Castle the plants are ten feet high, and ten feet thick. The slang phrase "How is that for high?" might have come from an admirer of a bush like these.

DESTRUCTION OF FRUIT BY BEES.—The San Bernardino (Cal.) *Index* says:

"The case of Randall and Noyes against Gustave Bohn, which was decided in Justice Knox's court yesterday, is probably without a parallel in the history of lawsuits. The plaintiffs are raisin growers in the highlands seven miles northeast of this city. Adjoining their vineyard, the defendant has a bee ranch. The action was for damages which the plaintiffs claimed to have suffered in consequence of the frequent visitations of the defendant's bees to their grapes. In support of their claim, they introduced numerous witnesses who swore that they had, in various instances, witnessed with their own eyes the perforation and destruction of plaintiffs' grapes, when alighted upon by the busy, busy bee of the defendant. The latter, in turn, introduced evidence to show the impossibility of this condition of things. He proved by a score of witnesses, that the bill of the insect is tubular and not pointed, and can, therefore, be used only as an extractor of sweets, not as a borer after them. The evidence of the eye-witnesses of the plaintiffs, however, had the weight with the jury, and they accordingly returned a verdict against the defendant for \$75 and costs of suit, which amount to over \$60. The plaintiffs were represented by Curtis & Otis, and the Hon. H. M. Willis looked after the interests of the defendant. A stay of proceedings has been asked for, and the case will probably be appealed. It is one of interest to bee-ranchers and raisin-growers, and is attracting much attention."

SCRAPS AND QUERIES.

THE SOULARD CRAB APPLE.—"Vixen," Baltimore, seems mad, and wants to know: "Can any one tell me whether in any single case, no matter how desperate, one solitary pleasure was ever derived from Soulard crab? The man that started it ought, in my estimation, be convicted of treason; and the old law that required a traitor to be hung, drawn, and quartered, should be revived especially in view of his speedy trial and conviction. If he or any other chap can show that one earthly benefit was ever derived by any one planting it, I will take back my verdict, that it is an enormous outrage on good nature ever to have sent out such a thing,—and is it not time to boycott those nurserymen who keep such disreputable stuff in their catalogues. It is all very well to say they did not send it out, and, as long as there is a demand they must keep up with the

times, and so on ad nauseam, as we have had dosed down us a thousand times. The keeping for those who will have it, is a different thing from advertising and pushing it by catalogue.

It is a scandalous outrage, that after I have had this tree growing for years in a limited piece of ground, hoping for something at least pretty if not good, I should have the additional loss of chopping it down and making a bon-fire. I could tear out the seller's eyes, I could, though I am not regarded usually as a vixen."

WASTE COAL AS MANURE.—Mr. J. A. Price, Scranton, Pa., believes that coal dust will make an excellent fertilizer. Mountains of it, brought from the mines as screenings, are piled up in the coal regions. Its dark color is in its favor. Dark soils are always more favorable than light ones for many purposes, by reason of their absorption of heat; and its carbonaceous properties ought to give it additional value.

FORESTRY.

EDITORIAL NOTES.

THE GREAT COUNCIL TREE OF THE SENECA AT KANADESAGA (GENEVA), N. Y., Nearly two miles northwesterly from the foot of Seneca lake. —On the Old Castle farm of Jerome Loomis, now owned and occupied by his children, is a large elm tree, known as the Great Council Tree of the Senecas. This elm is in fact a double tree, the two bodies branching just above the ground. Its measurement, August 21st, 1879, was as follows: Trunk, just above the ground, but near the crown of the roots, 25 feet; two feet above the last measurement, or about three feet from the ground, 21 feet 3 inches; trunk of west branch, 13 feet 6 inches; east branch, 15 feet 2 inches; the last two measurements being five feet from the ground. Spread of the whole tree 120 feet.

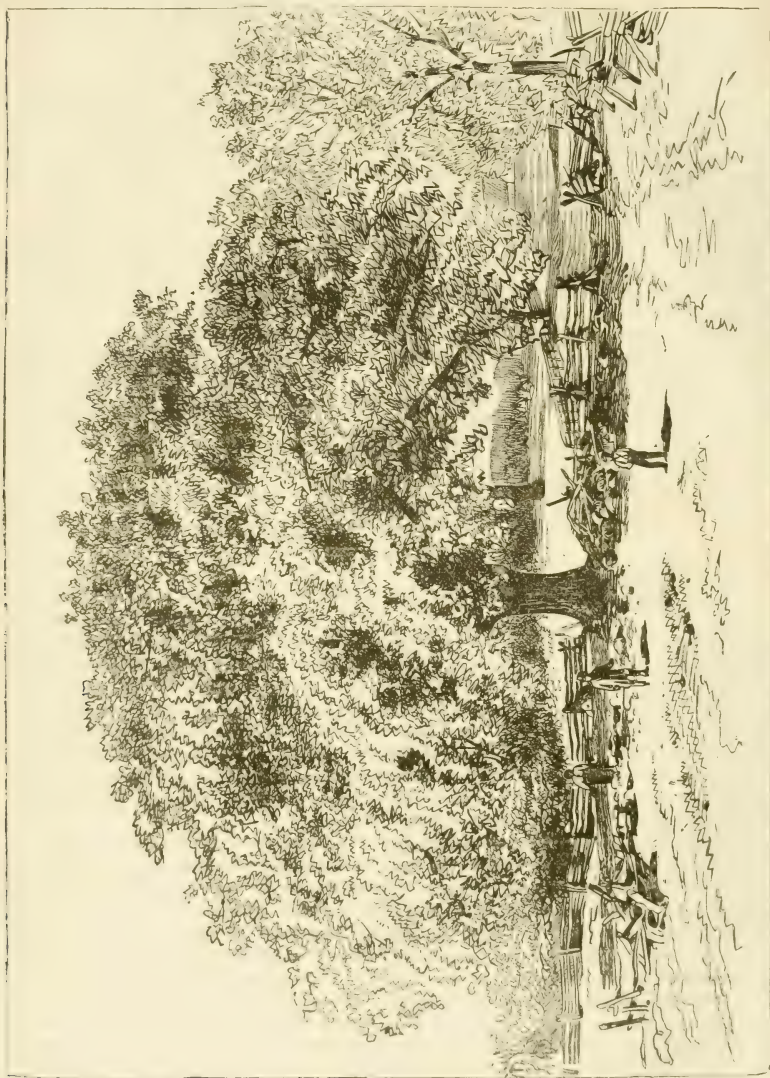
This noble elm is situated just east of the ridge on the farm on the east side of the old Pre-emption road, nearly half a mile distant and a little east of north from the Old Castle, and was situated in the midst of the corn-fields of the Seneca Indians at Kanadesaga. A little to the north of the tree was a large peach orchard, which was destroyed by Sullivan's army, Sep-

tember 8th, 1779. This peach orchard in a few years was again in a flourishing condition, and in 1797 one hundred bushels of peaches were sold from it to a neighboring distillery. The same year a farmer on one of the Old Castle farms sold cider to the amount of one thousand two hundred dollars, which was made from apples grown in the old Indian orchard, the trees of which had likewise been girdled by Sullivan's army, but had sprouted from the roots and were again in full bearing.

The large apple orchards were around and near the Old Castle, which was on the Crittenden farm, and also on the farm opposite the Old Castle, on the east side of the old Pre-emption road, then in the possession of Major Sanford Williams, but afterwards owned by Mr. Swales. Crittenden and Williams each had a cider mill and were at that time quite extensively engaged in the manufacture of cider, which found a ready market, as there were none but Indian apple trees in existence, and of them but few scattering trees, except what were on their farms.

Trees of wild plums, black mulberries, butternuts, walnuts and hickory nuts were in abundance in the immediate vicinity.

Under the eastern edge of the tree is a large stone deeply imbedded in the ground, about four feet long and twenty inches wide. This stone had a hollow scooped out towards one end, and was used by the Indians for pounding corn in, and it is in the same place where it was used and left by them.



The Great Council Tree of the Senecas at Kanadesaga (Geneva), N. Y.

feet long and twenty inches wide. This stone had a hollow scooped out towards one end, and was used by the Indians for pounding corn in, and it is

An Indian orator once said: "We shall not long occupy much room in living; we shall occupy still less when we are gone; a single tree of

the thousands which sheltered our forefathers, one old elm under which the tribes used to meet, will cover us all; but we would have our bodies twined in death among its roots on the very soil where it grew. Perhaps it will last the longer from being fertilized with their decay."—*From Conover's Early History of Geneva, 1880, p. 41.*

[The above cut is from an engraving printed in Frank Leslie's *Popular Monthly*, October, 1885, made from a photograph taken by Jas. G. Vail for Geo. S. Conover, in August, 1879, and which has been kindly loaned us by the publisher. During a gale of wind on the 14th of September, 1882, one of the large branches, comprising about one-half of the tree, was blown off and it has lost its pristine beauty and grandeur.]

TURPENTINE.—We see it stated in a Government publication, that taking but one crop of turpentine from a pine tree kills it, and "hence dead trees readily inviting fierce forest fires, abound in turpentine districts." We were under the impression that crops could be taken, as of sugar, from trees in many successive seasons. Do any of our correspondents know that the Government document is correct?

TULIP POPLAR LUMBER.—There appears to be a large demand for this lumber in Boston. About 300,000 feet that came over the New River Division of the Norfolk and Western Railroad, was delivered in a single week last year. It came from the head-waters of the Guyandot and Big Sandy Rivers in Virginia, and brought about \$30 per 1000 feet.

TEA CULTURE.—Unless we are wise, Italy will get the start of us in tea culture. A plantation at Novaro has been so successful that the Italian government is arranging to plant largely the coming year.

SCRAPS AND QUERIES.

GINSENG.—"H. H.," Wilmington, Del., asks: "Will you please inform me, if you can, in the next *GARDENERS' MONTHLY*, where plants of *Panax quinquefolium* (or *Ginseng*), can be purchased. It is a hardy herbaceous plant, native of North America."

[So far as we know it is not under cultivation, and in its wild state it has been nearly eradicated by medical root hunters.

During a two months' excursion in the mountains of North Carolina and Virginia, a few years ago, the only plant seen by the writer of this, was

in a small garden at the foot of Iron Mountain. It ought to pay well to cultivate the plant for the sake of the root.—Ed. G. M.]

PINUS PONDEROSA OF THE ROCKY MOUNTAINS.—"S. B. H.," Gordon, Sheridan Co., Neb. "By mail to day I send you cone, seed, twig, sap wood from live tree, and heart wood from dead tree, of a variety of pine that is indigenous here. The tree grows quite large, in some places three and four feet in diameter and quite tall, and free from knots. In the deep ravines young trees eight inches in diameter, are frequently forty and fifty feet high. The young trees in the open ground are very beautiful; when standing singly it is a perfect pyramid of green, and although a fast grower it keeps its shape and dense foliage, rivaling in its wild state any variety I ever saw in cultivated grounds.

"The heart wood from trees that have been partly burned, seems to remain buried in the earth for a long time without rotting. Can you tell me what variety it is? The young plants spring up everywhere, and seem indifferent whether they have shade, sun, drouth or moisture."

[This is the Colorado form of *Pinus ponderosa*, and which Dr. Engelmann named variety *Scopulorum*. The leaves and seeds are the same as the Pacific species, but the cones are generally smaller, and the whole tree less in proportion. About four feet in diameter is the full size, and they seldom grow more than fifty feet high.

On account of their smaller size than their Pacific relative, the species will not compete with it in timber culture, but for ornamental purposes in eastern gardens it is far superior, as being free from the pine leaf-rust, which destroys the lower branches of California pines generally, and this one in particular.—Ed. G. M.]

VALUE OF THE PECAN NUT.—"Walnut Hill," Cincinnati, Ohio, writes: "I think the flavor of the pecan nut, far superior to that of our English walnut. The only defect is the small size, and extra trouble in getting the pecan meat from the shell. What an immense stride in improvement would be made if we could get a pecan as large as a walnut! As almost all fruits can be improved by selection, I want to suggest to improvers of fruits, nuts, &c., whether it would not be worth their while to take the pecan in hand, with the view, in time, of getting a nut as large as a walnut?"

[No doubt improvers will be thankful for the

hint, but still more thankful if "Walnut Hill" would undertake the improvement by selection himself. There is no doubt, as he says, that selection would give much larger and better nuts, and there is no doubt an immense fortune for him in the success of the experiment, provided he lives long enough to fruit some half-dozen generations of pecan nut trees. Each seedling pecan tree is about fifteen years in coming into bearing, so that he can communicate to our magazine the results of his sixth selection in the 100th volume of our magazine.—Ed. G. M.]

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

ROCKY MOUNTAIN ECHOES.

BY REV. L. J. TEMPLIN.

Since coming to Colorado, I have had a little experience that is new to me, and that puzzles me not a little.

When I came here I brought some onions of the common button variety, that had for a number of years behaved properly in Kansas, producing sets and large onions alternately, as regularly as the seasons came. The first year here they produced an enormous crop of sets, but the first of August, before they were perfectly matured, there came a severe hail-storm that beat them down and bruised them considerably. The next year when planted, a large per cent. of these sets, instead of making large onions, sent up seed stalks and produced sets. The past year the same thing has occurred. But another strange thing has happened; the large onions set out last spring seem to have also lost their instinct, and instead of sending up seed stalks and producing sets, as well-bred onions should, they simply divided up and produced a number of onions, some of them of large size, after the style of potato onions.

Another experience I have had that does not correspond with the rules laid down in the books, has been with some cabbage. A year ago last spring I planted some plants of early cabbage—Burpee's, No. 2, I believe. These were planted on new "Park" land, that had not been thoroughly leveled for irrigation. Some of them, planted in some rows of small trees, did not receive sufficient water and so did not grow much, and when winter came on they were only good large plants. They stood there all winter exposed to the weather, the temperature falling as low as -26° . But they sur-

vived and came out all sound and living in the spring. The ground between the trees was cultivated the past year, but that directly in the rows was not disturbed, and so some of this cabbage was left to grow, and strange to say, they made a good growth and produced good solid heads of several pounds weight. The high altitude and rare atmosphere, or regular irrigation, or some unknown cause, seems to have turned the heads of these things till they forgot what they should do under the circumstances.

Our tomato vines were affected with some disease during the past year that caused almost a failure of that crop in this vicinity. About the time the earliest fruit was half-grown the plants assumed a dark, unhealthy appearance. The leaves were dwarfed and the growth was very slow and meager. A fair crop of fruit set on but it did not grow to exceed one-half the ordinary size. The fruit seemed to color without properly ripening, having a sickly, translucent appearance and lacking the fine flavor for which the tomatoes of this region are noted. *Canon City, Col.*

[These experiences are very interesting. They illustrate a point often dwelt on in our pages, that horticulture requires special study in almost every locality in order to be adapted to these localities. The onion in most parts of the United States, behaves differently to what it does in Great Britain, where a bulb 12 inches round can be obtained in a few months. It requires some knowledge of why a cabbage heads at all, or an onion makes a bulb, before the "principles" of their culture can be adapted to occasions. The tomato seems to have suffered from one of the forms of potato fungus—*Perenospora*. It would be worth looking at with a microscope next year. —Ed. G. M.]

THE WILD PLANTS OF TEXAS.

BY P. H. OBERWETTER.

In one of the last numbers of the GARDENERS' MONTHLY appeared an article on the wild plants of South Carolina, by Mrs. J. S. R. Thomson, which the writer of this read with much interest, and at the same time it reminded him that years ago he promised to write something similar, hoping that it may be of some interest to the readers of this magazine if they should happen to be of the same turn of mind as the writer of this, for to him nothing is so interesting as to read of the plants and flowers of other countries. These notes are jotted down for the GARDENERS' MONTHLY.

It is presumed that everybody knows that Texas is an extensive State and in consequence its climate is diverse, hence the great difference in the flora of the different sections. This difference is more striking when the traveler goes from east to west than from south to north; for when the traveler goes from Houston in south-east he finds magnolias near the coast, and some other large leaved evergreens which are not met with in the interior and towards the Red river; otherwise the flora has about the same aspect on its northern limits as on the coast. But what a change is there in regard to plants when a man travels from east to west! We need not go as far as the extreme western part of the State, the counties of Presidio, Pecos and El Paso, to imagine ourselves to be in Mexico or California, but less than one hundred miles west of San Antonio we meet in the canons and on the mountains of the upper Nueces river a flora so striking as we can only expect to find it in the interior of Mexico.

In view of the large extent of country, the reader will not expect that all remarkable plants of Texas are even enumerated, less described; besides, the deficient knowledge of the writer is a reason why this article can only be very superficial. The plants noted in this article grow mainly in the vicinity of Austin, which is about in the centre of the State, but occasionally plants from other parts of the State will be mentioned.

Starting from Austin some fine day in March we travel to the north-west; at the distance of four miles we come to the foot of the mountain; here the Colorado river leaves the mountains and enters the undulating prairie country. Mount Bonnell lifts up its head several hundred feet above the river; neither ascent nor descent is possible from the river side, as indeed it is only one-half of a mountain, half of it being torn away by

the Colorado river in past ages. So we make our ascent from the other side. Arriving at the summit we have the splendid view in all directions as usual on all mountains; after having taken in the view we look at and examine the plants around us. The first plant that arrests our attention is the *Sophora speciosa*, which creeps up from south-east side to the very summit. It is a beautiful evergreen shrub, or when old a small tree; has obovate pinnate leaves, very rigid, and in March is covered with spikes of violet blue flowers resembling the flowers of *Wistaria*, but upright and not drooping, but in one instance the writer of this found a plant which had the flowers bent over and somewhat drooping; there is also occasionally a pure white one. The flowers are powerfully odorous. The seed is a large bean of scarlet color, the size of a cranberry pole bean or larger, borne in large rough pods. It transplants very hard as its roots are not fibrous, but long and few and like to run between the rocks.

But what plant is yonder gray-leaved bush which selected its abode on and between the clefts of rocks overhanging a steep precipice? *Leucophyllum Texanum* is its name. It belongs to the order of *Scrophulariaceæ*, and is a spreading shrub from 5 to 10 feet high, evergreen, if its woolly bluish green leaves admit of this appellation. It is a very beautiful plant and flowers from May to October at intervals a few days after a good shower of rain, and a bush with its ashy gray leaves loaded with thimble-shaped rosy purple flowers is a beautiful object, and, unlike the preceding, it transplants tolerably easily. Close by we find *Maurandia antirrhiniflora* having established itself in the clefts of rocks and hanging down in graceful festoons loaded all summer with its light blue flowers. *Dodecatheon Meadia* is met on this mountain and has perhaps here its southernmost habitat, but it is far more abundant a few miles higher up in the mountains, where also some other flowers belonging to the northern flora are met, which will be mentioned later.

In the shade of some cedars, *Juniperus Occidentalis*, we find in May or June a beautiful orchid, indeed, the most beautiful orchid of Texas that I know. The Editor of this magazine kindly furnished me with its name, *Bletia aphylla*. As the reader will perceive, it is a sister or brother to some cultivated species, and, as its name implies, it is without leaves, and I will give as good a description as I can. The root is a creeping rhizome, flat and white, with ring marks around it resembling the insect called centipede;

to make this resemblance more striking there dangle from the sides or edges of the rhizome, at least in the flowering time, numerous short bodies which I believe are the annual roots. From the end or point of this root-stock there shoots up in spring the flower stalk without any leaves from the root or on the stalk; the leaves on the latter are mere small scales or bracts. The flower stalk grows about 12 inches high, half of the length is densely covered with beautiful flowers of the size nearly of Hyacinths, of the peculiar shape of all orchids; the color, deep purple with golden or bronze lines. In addition to this the stem and bracts have more or less the same color as the flowers; of the latter I counted twenty on a single stem. On account of the peculiar color of this flower and the dry cedar leaves which usually surround it, the plant is not easily discovered.

One mile farther down the river on the other side there is a small canon or a mere cleft in the rocks, one mile long. We penetrate this gorge. The wagon road as it enters the same leads for one hundred or more yards through a cave or under an overhanging rock in a semi-circle. Just where the road comes out from under the rock, there bursts a large spring out of the rocks ten feet above the road; the water is deliciously cool even in the hottest season. Ferns like such places and are here in abundance—*Adiantum*, *Aspidium*, *Asplenium*, *Cheilanthes vestita*. Higher up cactuses hang on the rocks, *Opuntia Rafinesquii*. Here we find the beautiful drooping fern *Pellaea flexuosa*. On ledges of rock and in shady moist places we find another beautiful orchid, it is *Epipactis gigantea*. It has a leafy stem 1 to 2 feet high, with leaves like *Lilium speciosum* all along the stem which terminates in a spike with up to twelve flowers of a yellow color streaked with purple. Here grows also a beautiful tuberous-rooted larkspur; it grows about 3 feet high and has a spike of fine flowers of a peculiar blue color.

But we will return to our first place. Also along the foot of the mountain and among rocks we find during the summer months a low growing shrubby plant of the order *Malvaceæ*. It has flowers from 1 to 2 inches in diameter of a very pink color and is blooming up to late in autumn. A straight and upright growing shrub is abundant; it has small leaves and virgate branches, about 6 to 10 feet high, and in summer long spikes of white, sweet-scented flowers. Its name is *Lippia lycioides*. In very bare places where the soil consists of disintegrated limestone the beautiful little *Erythræa Beyrichi* is found, also sometimes near springs. It

belongs to the order *Gentianaceæ*, and in flowering time has more flowers than leaves; the color is rose. Its near relative, the old *Lisianthus Russellianus*, but now I believe called *Eustoma Russelliana*, is sometimes here found, but more abundantly in the prairies in wet places, where it lifts up its panicle of splendid violet flowers from June to September; it is one of our most gorgeous plants. A small tree of the *Mimosa* tribe is found also on the summit of Mount Bonnell; it has fine bipinnate leaves and in April rose-colored globular flowers and grows from five to ten feet high.

In the ravine on the foot of the mountain grows *Sophora affinis*; it grows to a large tree in rich soil, but in poor situations even as a shrub a few feet high. It is deciduous with pinnate leaves, and drooping clusters of sweet-scented flowers in April, white with purplish pink. In the same locality with the preceding grows *Cercis renifolia*, large shrub or small tree with kidney-shaped leaves, and rosy purple flowers at end of February or early in March. In the clefts of rocks we may look for *Oenothera macrocarpa* with its very large golden yellow flowers. *Pentstemon Cobæa* is found in nearly all dry and rocky places; its large flowers appear in April. Another species, *P. digitalis*, is met nearer Austin in sandy pastures. A perennial sage grows in moist and somewhat shaded places; it has heart-shaped leaves which are scented like musk and a long spike of dark scarlet flowers. *Commelyna cœlestis* is very ubiquitous in its habit; it is found in gardens as a weed as well as in rocky places; its bright blue flowers are unsurpassed by any other I know. *Tradescantia rosea*, belonging to same order, is found in many places along the mountains. An annual *Commelyna* is also found here with red, white and blue flowers; the flowers are large, but the plant is of very rank growth and looks weedy.

A queer and strange plant is the *Ephedra antisyphilitica*. It belongs to the *Gymnospermæ*—the same to which the pine and cypress are classified. It is a drooping plant growing between rocks. The stem attains the size of a man's arm, with numerous long pendulous branches like a weeping willow; color of branches, dark bright green without any leaves. A most striking and characteristic plant—*Bacharis angustifolia*—lines the river courses, and flowers in September with silvery white plumes.

Amsonia longifolia prefers to establish its home on the tops of mountains, and produces its umbels of blue flowers in April. One of the earliest, if not the very earliest flowers, is *Anemone*

Caroliniensis. It lifts its red, white and blue heads of flowers sometimes in January. *Nemastylis geminiflora* sends up in March, leaves resembling those of a *Tigridia*, and adorns itself in April with pale blue flowers, some nearly white. It belongs to the order Iridaceae. A very similar bulb grows nearer the city of Austin in dry pastures, but is not so tall—only 6 inches high, with bright sky blue flowers—it is *Eustylis purpurea*.

In many places we meet with *Lantana camara*, gay with its changeable red and yellow flowers from May to October. *Callicarpa Americana* has also its home at the foot of the mountains. Its purple berries are very ornamental in autumn, and the writer of this has several times found bushes with ivory white berries instead of purple, and transferred the same to his garden.

About half way between Austin and this mountain is a single tree of *Acacia Farnesiana*. It is scarce near Austin, but abundant at San Antonio and south; and when it produces its globular yellow flowers in March, it perfumes the whole neighborhood.

A little spicy plant is also met on the mountain sides—the Pepper bush, *Capsicum frutescens*. It produces twice in a year—in July and again in October—its crops of scarlet berries; these are of a hot taste, much hotter than black pepper. The birds relish it, and it is also gathered and dried for the household; it is the main ingredient of several Mexican dishes, as *Chile con carne* and others, which are sold by Mexicans on the streets of Austin.

On the side of the mountain we find also a Four o'Clock, and from Asa Gray's Forest, Field and Garden Botany, I guess that it is *Mirabilis Wrightiana*. It occurs even as a weed in neglected fields; flowers, purplish lilac. Now comes again an evergreen shrub, *Rhus virens*. It is a true evergreen with leathery leaves, not very high—4 or 5 feet—but spreading, and is embellished in September, with small panicles of sweet-scented white flowers. A little farther up the mountains we find *Aquilegia Canadensis*, usually in moist and shaded places, but occasionally a plant is found in a little pocket of a boulder fully exposed to the glare of the sun, and producing flowers in such situations.

Chelone glabra has selected its abode in wet places, and bears long spikes of whitish flowers, striped and spotted with purple. *Erythronium albidum*, a beautiful little bulbous plant, with green leaves spotted with purplish brown, may be found in secluded places early in March. *Apios*

tuberosa, which the Editor of this magazine named for the writer, is very scarce. The writer found it only in a single place here in the mountains. Several kinds of *Oenothera* are met, but the specific names are not known to the writer. They are all tall and yellow flowering. *Lobelia cardinalis* is abundant where it is sufficiently moist. A species of *Dasylirion* with long leaves like rushes, takes the edge of rocky ledges, and produces in April a large panicle of white flowers. Here in this canon—for the whole valley of this creek and its ramifications consists of narrow gorges—is also the home of *Clematis coccinea*, now sufficiently known not to need any description. *Clematis Viorna* grows below the mountains, and is not found with *coccinea* together in the same locality.

On our way homeward we notice a bulb, or rather its leaves, in many places. The leaves are bluish, flat, two-ranked and the bulb large, nearly as large as the bulb of an *Amaryllis*. In summer, after a good shower of rain, it sends up in a few days a spike with a single flower 2 inches in diameter, white, tipped on the outside with purple. It is *Cooperia Drummondii*. A near relative, *Cooperia pedunculata*, dries up in May, and flowers in August or September, after the fall rain has set in. At the same time with the foregoing, we find in sandy Post oak soil around Austin, a pretty little bulb in flower, *Habranthus Andersonii*. It is bright yellow inside; outside striped with purplish brown. These three bulbs are classified as *Amaryllidaceae*. On the side of low somewhat rocky elevations, grows a Liliaceous bulb from 1½ to 2 feet high, with a spike of lilac-colored flowers in March; leaves long and on the ground. Nearly in the same places, but more at the foot of the hill, where there is an accumulation of fine light soil, the flowers of *Androstephium violaceum*, another little bulb, appear early in March, with red, white and blue colors. *Sisyrinchium minor* is a little perennial, herbaceous plant, much like robust grass in appearance, and with a panicle of blue flowers in March or April.

Near springs in wet ground, or along streams of water, grow two species of *Hibiscus*—*H. moscheutos* and *H. militaris*—about 5 feet high, with large white flowers and purple centre. In rocky places can be found *Gilia rigidula*, a very low-growing, half shrubby plant with bright blue flowers early in summer. Below Austin, in sandy soil grows the beautiful *Asclepias tuberosa*, with its large heads of orange-colored flowers. Still farther down, some 10 or 15 miles, we meet with *Pentstemon Murrayanum*; while all along the Colorado

river, *Phlox Drummondii* is found in somewhat sandy soil.

And now I propose to take the reader of this magazine 200 miles away to the confines of Texas, and to the canons of the upper Nueces river, stopping on our way in two or three places. First we make a halt at New Braunfels on the Guadalupe river. Here the Comal river rises, and after a course of a few miles, mingles its waters with those of the Guadalupe, below the town of New Braunfels. The water of the Comal is very warm, of an even temperature winter and summer, being all from springs at the foot of the mountains. Wherever the water is not too deep, or a foothold offered, *Caladium esculentum* has established itself, giving to the landscape a charm peculiarly its own. But the plant is not indigenous there, for the writer of this very well remembers when he first came to New Braunfels, in the summer of 1854, that there was not a single plant to be found in the river at that time. It was introduced there about 1860. A few miles above New Braunfels on the Guadalupe river, in somewhat rocky soil, grows a peculiar plant, which, as far as I know, is in Texas found nowhere else. The plant in question is a shrub belonging to the order Onagraceæ. The name given to me by a gentleman in New Braunfels is *Fendleria rupicola*. It is of upright growth, branches long and thin, about 5 feet high, evergreen, leaves like myrtle leaves, and to make the resemblance to a myrtle more striking, has flowers like the myrtle, but larger. It flowers in March, before or with the new growth. The flowers are tipped on the outside with purple, and resemble in other respects the flowers of the *Oenothera* in having claws to the petals. It transplants easily, and is worth a place in every garden where it will thrive.

But we will resume our journey and stop at San Antonio, where we find in the vicinity, the beautiful *Agave maculosa*. This plant has a thick root like a turnip. The root leaves are spotted with brown, and in the heat of summer coil up somewhat, giving them the appearance of a bunch of snakes. It flowers during summer or autumn, when it sends up a stem 4 feet high, beset with flowers of the size and shape of single tuberoses. They are greenish when they open, and bright pink at their best, turning to a dull purple when they fade, with the fragrance of a tuberose.

But we go on travelling towards the west, where the old wagon road from San Antonio to El Paso crosses the dry bed of the Rio Frio. Basaltic rocks have been lifted up; in and be-

tween these rocks we find growing an elegant shrub about 9 feet high, with bright green leaves, and the entire summer covered with racemes of tubular orange scarlet flowers. It is *Anisacanthus Wrightii*; order *Acanthaceæ*. We pass on through the little town of Uvalde; here we leave the El Paso road and strike for the mountains. Our destination is the East Canon of the Nueces. We have not travelled far, we come to an elevated ridge; there the mountains rise in the distance, two of them tower up at the very entrance of the canon like sentinels. We travel up a few miles and finally stop where a tremendous chalk bluff (so the people call it, though I believe the rocks are not composed of true chalk but hard limestone), lifts up its head close to the banks of the river. Our whole surroundings are now very different from those in central Texas. Grass is very often wanting in many places of the valley of the canon. Its place is occupied by cactus, several species of thorny shrubs, belonging mostly to the mimosa tribe. *Yucca aloifolia* in every direction. A large *Bromelia* forming huge tufts of long serrate leaves is very conspicuous. If there were not some groves of pecan trees and a few hackberries and elms with some other trees with larger leaves, the contrast with central Texas would be still more striking. Wending our way towards one of the mountains, we pass through the dry bed of a creek. A small close growing shrub with scented leaves and spikes of purple flowers arrests our attention; it is *Salvia Greggii*, one of the most abundant bloomers I know. If we chance to be here in March we find a nearly prostrate or at least a low, round and bushy perennial plant, with large umbels of long tubular sweet-scented flowers of a creamy white color, tinged on the outside with purple. Seeing the plant at another season of the year, nobody would expect that this insignificant looking plant would produce such beautiful flowers.

Ascending one of the mountain ridges that line the canon on both sides, we find on the very top in dry black waxy soil, a beautiful herbaceous perennial with dark green leaves, scabrous or rough to the touch. It has scarlet flowers, and the large bracts which clothe the entire upper part of the stem and accompany the flowers, are even of a more intense scarlet than the flowers. I suppose you would be very eager to secure a plant with roots, and attempt to pull up one of them. You will be disappointed, for the shoots of the plant break at the bottom like glass, if roughly bent. This gives you a lesson. But

soon we discover another beautiful specimen of this plant. Taking now a pick or some other instrument, we carefully remove the soil around the plant, and find that it has a few long, thin, yellow, thread-like roots, very much like yellow silk thread. Now you have secured the plant, but you are not yet in port, for most likely on your way home the shoots will break off from the plant by the jolting of the wagon, and the mere roots if planted will refuse to send up new shoots. All I know or can make out of this plant is that it is a *Castilleia*, order *Scrophulariæ*. I guess this from its resemblance of *Castilleia pallida*, and if the Editor could guess from the description its name, he is politely asked to insert it here. Several years ago I read in the *GARDENERS' MONTHLY* about a partial root parasite from California, also a *Castilleia*, and it may be this is the same plant, for when digging up a plant there was always a thick root of some other shrub found at some distance under the surface, and the roots of this *Castilleia* seemed to feed on this root. A beautiful shrubby *Pentstemon* comes next. *Pentstemon baccharifolia* grows not over one foot high, evergreen little shrub with serrate or crenate leaves, and spikes of coral red flowers with some white. But is not there a fern growing on the very top of the mountain in the most ordinary dry dirt and little rocky fragments, exposed the whole day to the full glare of the sun? It is indeed a fern; the circinate veneration of the leaves betray it. It appears as if the dust of a whole year had accumulated on its fronds, but it is not dust, and on examination we find that the whole plant is woolly underneath and on the stem; the upper surface of leaves is of a beautiful glaucous green. It is *Notholæna albidia* and is about 6 inches high.

A small *Agave* covers whole acres of land, probably *Agave Virginica*, its leaves on the south side all lifted up and bent over to the north, by the action of the south winds, which blow here in spring and summer. This is the compass plant, of which newspapers sometimes bring sensational articles.

For a descent down into the valley we select a somewhat steeper part of the mountain, as it is much easier to come down in such places than climb up. Nearly 100 feet below the summit of the mountain there crops out a very solid and thick bed of limestone, sloping sharply down, and in places nearly perpendicular, facing north-east; here is a wealth of ferns. Where the rocks are not too steep, there has accumulated a sort of peat

from the dead ferns of past ages, and from the upper part of the rock bed, the rain water, stored up in the looser ground above, oozes out and keeps the peat below more or less moist. A still more beautiful fern than the last named grows here. *Notholæna sinuata*, also covered with downy pubescens on stem and underside of fronds, of a golden bronze color, the fronds leathery and thick, of a peculiar green on upper side, evergreen and a foot high. The next is *Cheilanthes argyrea*, like frosted silver underneath; also evergreen. *Cheilanthes viscosa* has its nearly three-cornered frond finely cut as if it were moss. Climbing down the mountain side we find under the shade of some trees a creeping fern, with a leaf like a pecan leaf, bearing on its rhachis a flower stem, or rather a spore stem. But we will leave the ferns and turn our attention again to trees. In the dry river bed grows everywhere the beautiful *Chilopsis linearis*, *Bignoniaceæ*. A tall tree with spikes of purple and white large flowers during summer, and leaves like a willow; therefore called Willow Catalpa.

On our homeward way we will stop at the little town of San Marcos, 30 miles from Austin, where the river of the same name takes its start. Besides *Nelumbium luteum*, which is very abundant, our attention is arrested by a kind of sunflower growing in the water. It stands on the sides of the river where the flow of the water is not too swift. It is an upright plant with its roots in the mud or sand, opposite leaves, with lateral branches at nearly every joint above the water; from the stem and also perchance the branches under water, shoot out roots which hang in the water. The plant is about 4 feet above the water and full of large yellow sunflower-like blossoms, though more beautiful than sunflowers are, and the disk of the flower not so large, and if the Editor could guess from this description the botanical name, he would much oblige the writer by inserting it here.

Having finally come back to our starting point, I will introduce a few more plants which have not been mentioned yet by me. *Baptisia leucantha* is a beautiful herbaceous perennial plant, occasionally found in the surroundings of Austin, in sandy soil, with long pendulous racemes of pale yellow lupin-like flowers in April. In the same soil grow also two fine climbers of the *Leguminosæ* family—*Clitoria Mariana*, sub-climbing, and *Lentrosema Virginiana*, the latter with long tapering spindle-shaped roots; both have large lilac colored flowers, with a white spot

on the vexillum or standard, *i. e.*, the upper leaf of the irregular corolla. But in these two plants the flowers have assumed somewhat the habit of orchids. The flower when opening, from the greater weight of the standard probably, turns around and has the standard on its under side.

And now the writer of this talk about flowers and plants thanks the indulgent reader of the GARDENERS' MONTHLY for the kind attention given to him, hoping that he soon may read in this magazine something about the flowers of other states.

Austin, Texas.

FIRE BLIGHT IN PEARS.

BY PROF. J. C. ARTHUR.

The December MONTHLY contains a statement that my work of the last two years has not been with the true, deadly "fire blight," which fruit growers so much dread. It was, however, set right in the following issue, and to that correction I desire to add the following testimony. Mr. Atwood's letter was entirely unsolicited, and from the time the article appeared till now we have had no other communication. All the virus used for my experiments the first year (1884), and during the following spring, was obtained in the first place from Mr. Atwood—in fact he furnished the original material for all the important results so far published. The season of 1885, however, brought an abundance of blight in our own orchard, and it was no longer necessary to go elsewhere for it. If there are any lingering doubts of the genuineness of my work it seems as if this letter must dissipate them:

"GENEVA, N. Y., Dec. 2nd, 1885.

"My Dear Prof. Arthur: I have just noticed in the GARDENERS' MONTHLY, p. 366, the suggestion that what you have been dealing with is not the fire blight.

"In your defence I wish to say that for every spring the last twenty years I have planted from 25,000 to 150,000 pear seedlings, raised a great many pear trees, been here in the centre of pear culture, and am able to speak of what I know when I say, that the blighted wood I furnished to make your experiments with was the genuine fire blight. Yours, GEO. G. ATWOOD, Salesman and Manager Washington St. Nurseries."

Experimental Station, Geneva, N. Y.

EDITORIAL NOTES.

PLANTS ON WHICH MISTLETOE GROWS.—Mr. Isaac Burk informs us that in many parts of Southern New Jersey, the Red maple seems to be the only plant on which the mistletoe grows, and

Dr. Brinton says that it is as often at least found on the Red maple in Delaware as on any other tree.

THE ST. LOUIS ACADEMY OF SCIENCE.—In opening the Shaw School of Botany, the Chancellor of the Missouri Washington University, gave an account of the origin of this body, showing that it arose rather from a feeling of its necessity to the community, than an outgrowth of science itself. Not one of the founders "knew enough of Science to found a primary school, except Dr. Engelmann." This was more than forty years ago.

FLORAL BAROMETERS.—The *Illustrirte Garten-Zeitung* says that the flowers of the well-known Spiderwort, *Tradescantia zebrina*, always open their flower buds twenty-four hours before rain comes. The plant is placed in a room where it receives the full rays of the sun. When the plant is in a flowering condition, buds follow each other rapidly, and it is very easy to note the facts as stated.

RAINFALL PER ACRE.—People scarcely understand by rainfall in inches, what this really means, but an inch of rain means a gallon for every two square feet, or 100 tons per acre.

LOCUSTS IN MEXICO.—A correspondent of the *Friends' Review*, writing from Matamoras says: "In their flight, the locusts always go due north, and that they feed in divisions; one flock descends to feed, and when they rise, they fly over and descend beyond the flocks already feeding, and so they continue as they advance. They start on their journey about 8 A. M. in that region. The people prevent them from descending, by firing guns and making noises, when the creatures think it best to move further on."

CAUSE OF ASTRINGENCY IN THE PEAR.—Just why some pears are astringent in some localities and not in others, has never been carefully developed, that we know of. Under the head of Glout Morceau, Downing says: "sometimes astringent in heavy soils." Notwithstanding the great weight attached to any opinion by Mr. Downing, we have had some reserve in accepting this, that soil had much to do with the astringency. Recently we received some remarkably fine specimens of this variety from a correspondent at Allentown, Pa., but which had the slight astringency referred to. We wrote to enquire the circumstances. Our correspondent says: "The soil in which the Glout Morceau pear tree is growing is a yellow stiff clay."

This certainly confirms Mr. Downing's opinion. While we are on the topic, it would be well to receive notes from any one who has astringent

pears, of either this or other varieties, so that we may have some conclusive evidence from a number of cases, and perhaps definitely settle the relation of soil to astringency.

SCRAPS AND QUERIES.

YELLOW ZEPHYRANTHUS.—"G. R.," Beverly, N. J., says: "Among some new Zephyranthus bulbs obtained from a friend abroad, I have one with a yellow flower, and would feel obliged if you would give me the botanical name of it in your next issue."

[There is no yellow Zephyranthus, so far as we know.—Ed. G. M.]

PINUS PONDEROSA, VAR. SCOPULORUM.—Mr. S. B. Higgins, of Gordon, Nebraska, sends us specimens for name, of a pine, native to that locality, which proves to be this species. We gave

him the name, and he inquires, "Is the *Pinus ponderosa* hardy, and does it succeed in other localities besides where it is indigenous?"

The normal or originally described form of *Pinus ponderosa* does not do well under culture in the East. It loses its lower leaves and branches very early, through the operation of the Pine-leaf fungus, and soon has a look of the shabby-gentle. This form, variety *scopulorum*, does, however, remarkably well, and deserves a wider introduction. Mr. Douglas has done much to bring it into note, but much more is needed. Its merits are so far beyond that of the original *ponderosa* as an ornamental plant, that great care should be exercised in avoiding confusion. It would be far better to drop altogether the name, *ponderosa*, when writing about it, and to use only *Pinus scopulorum*, leaving to the critical botanist the filling in of *ponderosa*, when critically treating of the science.

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

A CHAPTER IN THE SECRET HISTORY OF THE GLOXINIA.

BY W. D. BRACKENRIDGE.

The discovery of *Gloxinia rubra*, and its subsequent history, may possess some little interest to horticulturists, about which there has long hung a mystery.

During the latter part of the year 1838, while acting as one of the naturalists attached to the United States South Sea Exploring Expedition, we visited Brazil, and during one of our botanical excursions in the vicinity of Rio Janeiro, and right at the base of the Corcovado Mountain, I detected, growing on wet rocks, a solitary plant of this *Gloxinia* in company with vast numbers of *G. caulescens*—of which then—and even now, I consider it only a mere sport or variety; for all that Doctor Lindley described it as a distinct species. Furthermore, that prince of horticulturists, Monsieur Louis Van Houtte, doubted its nativity, as he had a special collector in that country, who had met nothing like it; neither did I, during many extensive rambles in that paradise

or headquarters of the vegetable kingdom. The color of the flower was what took my eye, and, as a practical horticulturist, who had frequently been manipulating varied species, so as to produce intermediate varieties, it occurred to me, that a cross between this and the few purple and white flowered kinds then in cultivation, that something good would be the result. That I was right in my conjectures, witness the numerous beautiful and delicately-marked hybrids that now adorn our conservatories.

The foregoing is the pleasant part of its history. This and what is to follow ought to have been given to the public long ago, but at the time of the discovery—and long afterwards—we were acting under a gag law, as to the disposition of material collected during that expedition. I had carefully estimated what it was worth, and could not think of throwing it away. Thereby my scruples about disobeying orders were overcome. So, after having a drawing made of the whole plant, I dried the flowers and foliage; then packed the root in a box, and dispatched it by the first ship which left for the United States, directed to my friend, Robert Buist, Philadelphia, who multiplied it, and sold the whole stock, without reserve, to

Mr. Hugh Low, nurseryman, Clapton, London, for the sum of forty pounds, sterling.

During the time Buist was getting up the stock referred to, a person stole leaves from the original plant, and handed them over to another plant firm in Philadelphia, who also got up a stock, and sold it to the Messrs. Young, nurserymen, Epsom, England, who advertised it extensively. Then began a war of crimination and recrimination, Low accusing Buist of having deceived him in not letting him have the whole stock; while Buist was accusing the party who supplied the Youngs with the article. To end the matter, Buist had to refund a part of the original amount paid by Mr. Low; not a cent of which—in money or any other consideration—was ever received by me. I have reaped all I desire, in being the medium through which it reached the horticultural world.

[It may be as well to state, for the benefit of those who may not know, that the *Gloxinia* is propagated from leaves. A leaf planted will make a bulb from the end of the leaf stalk, and the bulb makes a plant next year. The leaves in this case were cut from a plant sent for exhibition at one of the meetings of the Pennsylvania Horticultural Society, as we were informed by the late Robert Buist.—Ed. G. M.]

EDITORIAL NOTES.

HARDY VARIETIES.—It is beginning to be well understood by fruit growers that "hardiness" as a character for a fruit, has a very uncertain meaning if taken in an absolute sense. A variety that is hardy enough when it first appears, gets its constitution run down and then it is not hardy. It therefore, by no means follows that because a stock of any given variety in one man's hand is not "hardy," the same variety will not be entirely hardy in the hands of another who has other plants. Thus we have contradictory reports continually about the hardness of grapes, raspberries, strawberries or gooseberries, and their freedom from mildew, disease or frost bites. In most cases the trouble comes from a weakened stock. Methods of propagation, culture, or the secret attacks of invisible fungi, will often weaken a whole race, without any ill effect being visible to even the trained observer, and the first evidence is found in the plant being "not hardy" or in some other way the kind is found to be "running out." Even the Gregg raspberry was reported last winter, as "not hardy" in some places.

THE FLORISTS' SMILAX.—This pretty plant, botanically *Myrsiphyllum asparagoides*, had too long a name for familiar use, so the florists took to calling it *Smilax*. The leaves do look a little like a *Smilax*, though of course it is not a *Smilax*. The English florists now use it for their cut-flower work; but they insist it is not a *Smilax*, and will not have this name. They call it *Creeping Myrtle*. But it is no more a *Myrtle* than a *Smilax*. In America *Creeping Myrtle* is the small *Periwinkle*, *Vinca Minor*. These tossing about of "common" names by no one of any recognized authority, long before they are common, is a nuisance, as the facts now given well illustrate. Nomenclature becomes a Babel where no man knows what his neighbor is talking of.

TURQUOISE PLANT.—This is the common name under which a grassy-looking liliaceous plant, common in cultivation, is now known in Europe, and which botanists call *Ophiopogon*. The flowers are not showy, but the peculiar violet-blue berries are attractive, and have probably suggested the common name.

DR. JOSEPH HOOKER.—This world-renowned and esteemed botanist has retired from the Directorship of the Kew Gardens. His son-in-law, Professor Thistleton Dyer, succeeds him.

DR. ASA GRAY.—Dr. Gray on the 18th of November passed his 75th birthday. It was made memorable to him by a pleasant testimonial from American botanists.

JOHN THOMAS.—We regret to learn that among the early florists of St. Louis Mr. John Thomas is among those recently deceased. He had been in feeble health for a period of twelve years. His death occurred on the 28th of October. He was among the first to welcome the appearance of the *GARDENERS' MONTHLY*, and continued a constant reader to the last.

REVEREND MOSES D. CURTIS.—To our readers Dr. Curtis is probably best known by his little book, "*The Woody Plants of North Carolina*," which was first issued in 1860. Dr. Curtis died in 1872, but no extended account of his botanical career and scientific services has ever been prepared. This good work has now been accomplished by Dr. Thomas F. Wood, of Wilmington, in the proceedings of the Elisha Mitchell Scientific Society, together with an excellent portrait of the botanist. From this we learn that he was born in Stockbridge, Mass., on May 11th, 1808; went to Wilmington, North Carolina, 1830, as a tutor

in the family of Governor Dudley; returned to Boston and commenced study for the ministry in 1833-'34; returned South in 1834, marrying in December of that year Mary De Rosset, daughter of Dr. De Rosset, of Wilmington, and was ordained as an Episcopalian minister by Bishop Moore, of Virginia, in 1835. He took up his residence at Lincolnton and commenced missionary work. From 1837 to 1839 he was a teacher in the Episcopal school at Raleigh. Following his clerical duties he dwelt in 1840 in Washington, removing the next year to Hillsboro, where he remained six years. In April, 1847, we find him at Society Hill, where he resided nine years. In 1856 he removed to Hillsboro, where he died in 1872.

Scattered between these dry periods in the history of this good man are numerous personal notes and reminiscences connected with his botanical career, the whole making an extremely interesting chapter of 31 pages, for which all who venerate Dr. Curtis' memory will heartily thank Dr. Wood.

ORCHID GROWER'S MANUAL.—Sixth Edition.—By B. S. Williams, London. Published by the author.

One of the best proofs that orchid growing has taken deep hold on the flower loving community, is the appearance of a sixth edition of a large and beautiful work like this, containing as it does 660 pages, and illustrations of 136 species, besides numerous drawings and sketches of orchid houses and matters pertaining to orchid culture. It gives the whole history of the different orchids under culture, where they come from and how they ought to be grown. This method of treatment gives the work an interest to one who may not have an orchid. It will indeed be an excellent work to give to friends when a nice present is desirable, while as an aid to the orchid grower it is invaluable.

THE VEGETABLE GARDEN.—By M. M. Vilmorin—Andrieux of Paris. Translated into English. Edited by Wm. Robinson, Editor of the *Garden*, London. Published by John Murray, 1885.

Mr. Robinson in the preface to this superb book says that "our best friends do not always get our best attention;" but our good friends, the garden vegetables, will have no cause to complain, for we doubt whether their jealous neighbors, flowers and fruits, ever received such ardent attention as the Vilmorins have given vegetables in the book before us. It is a large octavo of 620 pages, and with illustrations on nearly every page.

The American reader will miss his indispensable Lima bean and other favorites, and he might wish that the book could have been so managed as to cover American ground in other respects, as well as the ground so ably occupied from an European stand-point; still, if he wants a library worthy of the name, he will have to find a place for this. Mr. Robinson, who as editor of the French translator has done all English speaking people a service, well remarks that though the French original has been by him "newly done in English," it is a work for America and Australia as well as the "old house at home."

Besides being an indispensable work to the intelligent cultivator, the historical and other notes will render the book as welcome to the general literary taste as to those of a merely culinary disposition. It seems as if everything that could be collected about vegetables is given here. Sometimes we fancy research has given more importance to some facts than they deserve. For instance, speaking of our Indian corn we are told under "uses," "The head or 'cob' is boiled and served up, either entire or the seeds are taken off and served up like kidney beans. The heads are also gathered when very young and small, and before the flower opens, and are pickled in vinegar like gherkins." Possibly the young ears are so treated to a vinegar bath, but the Editor of this magazine never heard of it before, and if so, such a use must be very local indeed.

THE ART OF BEAUTIFYING SUBURBAN HOME GROUNDS.—By Frank J. Scott. John B. Alden, New York.

If the wish is ever father to the thought, we must take credit for the appearance of this beautiful work, the suspension of the publication of which by the Appletons we have so often regretted. As recently remarked in our notice with the portrait of its author, Frank J. Scott, it is a work of which American horticulturists have cause to be proud. Its influence on landscape gardening must be very great, and now, when there promises to be a revival in the lovely art, its presence is particularly timely.

GRAY'S BOTANICAL TEXT-BOOK. VOL. II. PHYSIOLOGICAL BOTANY.—By Dr. George Lincoln Goodale. New York: Ivison, Blakeman, Taylor & Co. 1885.

When we read of Dr. Asa Gray, we think of him as we all know him, an active man, busily engaged in work, and accomplishing as much as the youngest among us. We can hardly realize

the fact, when we take up the work before us, that it is only a few years of half a century ago—1842—when the first edition appeared. That edition, though hastily prepared, and imperfect, was so well received, that another had to follow in 1845. In 1857 the fifth appeared. Soon after this botany had advanced to so great an extent that it was evident that a very much larger work would be required, and that the whole field would have to be gone over, and the work reconstructed. The task became too large for one man. Dr. Gray prepared himself the portion of the science embraced under Structural botany, and which was published in 1879; the portion devoted to Physiological botany he remanded to his eminent pupil, Professor Goodale, and this is what we have before us today, completing the new edition of Gray's Text-book of Botany, or edition sixth.

Some idea of the vast progress made in our knowledge of botany since the first appearance of the work may be gathered from the fact, that while the second edition now before us was complete in 509 pages, the portion of the new devoted to Structural botany, alone occupies 442 pages, and this second volume by Prof. Goodale 499 pages.

Horticulturists of all classes in the community, will be thankful to Professors Gray and Goodale for the completion of this work. A man may grow cabbages and potatoes, or raise roses or geraniums, without the slightest knowledge of botany; yet not only the pleasures but the actual cash profits of gardening are manifoldly multiplied by a study of the structure and life-history of plants.

AMERICAN GARDEN.—With the 1st of the year, the *American Garden* appeared as a \$2 magazine, but with a re-doubled bill of fare that we are sure will make it doubly acceptable to the readers. Dr. Hexamer, its former editor, has joined the staff of the *American Agriculturist*.

HORTICULTURAL ART JOURNAL.—Mensing & Stecher, Rochester, N. Y. This new candidate for popular favor proposes to disseminate by means of colored lithographic plates, correct representations of new productions of the nursery, seed garden and greenhouse. The first number now before us, beautifully illustrates a new crimson Hybrid Perpetual Rose, Marshall P. Wilder; Plum, Shippers' Pride; Raspberry, Rancocas; and the Niagara Grape. It is something after the style of the *Florist and Pomologist*, that had a good run in England, until the advancing years of its editor led to its suspension.

SCRAPS AND QUERIES.

PLUM AND CHERRY SEASONS.—A correspondent sends us the following: "In the southern counties of England there is a familiar proverb:

'A Cherry year a merry year;
A plum year a dumb year.'

Which is explained in the *Journal of Horticulture*, to mean, that 'cherries are never plentiful except when their blossoms have a genial spring and summer, and that an abundance of plums carries an increase in the death rate.' In the *Westminster Review* for January, 1881, may be found a more ingenious, if not more plausible, explanation. The word 'merry' according to this authority, has nothing whatever to do with our adjective so spelt, but is connected with the French *merise*, and is a common provincialism throughout the south-west of England, for the wild cherry (*Prunus Avium*). In Hampshire, 'cherry feasts' are still held. The learned authors of 'English Plant Names,' further remark that there are various kinds of 'merries,' known as red, black and white, in different parts of England. The word 'dumb' has also nothing to do with the adjective so spelt, but is a corruption of 'damson' (*Prunus communis*). The meaning of the rhyme now becomes apparent. It simply says that a good year for cherries is also a good year for 'merries,' and that a good year for plums, (always spelt 'plumb' by the rustic of the west of England, and so making a purer rhyme,) is also a good year for damsons; that, in short, the year which is favorable to cultivated is also favorable to wild fruit."

[This explanation shows how scholastic acquirements may run away with one. Plum is not written "plumb" by the rustics of the west of England. When the said "rustics" write of the mason's instrument, the plumb-line, they write it "plum-line." It is the scholarly people who write "plumb-line," that write "plumb," when referring to a plum tree, and because they think the piece of lead that is shaped like a plum, was so called from the resemblance, and not from plumbago; that is, lead.

It is perfectly true that Merry is used in many parts of the west of England by the "rustics," as the name of a cherry. It is a very small black variety of cherry, cultivated, and often found nearly like it wild. It is very sweet, rather more so than the average of cultivated cherries. The name, Merry, is not applied to inferior forms of the cherry when wild, nor to any form but this black

one. Although it is the general opinion with scholars that "Merry" is derived from the French *cerise*, it is but a shrewd guess, and the writer takes no "stock" in it.

At any rate the relation of the Merry to the cherry is so close that what affects one would affect the other, and the dumb with the plum so violent, that few will value the interpretation of the *Westminster*.

The interpretation we should give of the rhymes would be, that a year favorable to a good cherry crop, would be favorable to good health, to merri-ness; and a good plum year, unfavorable, cold and dumb in death.]

MR. N. B. STOEVER.—Mr. F. W. Beach, of Richmond, Indiana, writes that he understands "Ohioan" as casting doubts on Mr. Stoever's "truth and accuracy." He knows Mr. Stoever personally, and is sure he could not intentionally make any wrong statement.

We cannot see that "Ohioan" expressed any such an idea of intentional disregard of truth, or we should not have passed the article. The whole question involved is as to the idea intended to be conveyed by a foot of glass, in connection with the amount of work a heating apparatus is called on to perform. On this subject our present correspondent himself says:

"There seems to be a difference of opinion as to the true way of calculating the amount of glass in an establishment. I think it should be by the actual amount of glass surface it contains, and not the amount of ground covered. The American Florists' Association will no doubt settle this question in their insurance department. While I have not measured the actual dimensions of Mr. H's houses, and can not, of course, give the actual measurement, I do not think Mr. Stoever has any reason for over-estimating it; and I surely do not believe Mr. Stoever would be willing to falsify himself, for the sake of enlarging another person's property on paper."

It is, therefore, not "truth" or "veracity" that is called in question, but a technical term that requires definition. At least so we understood it.

DISTRIBUTING GOVERNMENT SEEDS.—"W. C. B.," West Philadelphia, well remarks: "We think Commissioner Colman makes a just complaint about the arrangement of the Department of Agriculture in its distribution of seeds. Two-thirds of the seeds are annually distributed by Congressmen, who are supposed to place them in the hands of

such persons in their districts who keep a record of their growth and send it to the Department. But it is too true, that many of the Congressmen seem to look upon these seeds as their own property. They distribute them among their friends, who decorate their grounds with their products, and make no reports.

"The large appropriations made for the purchase of these seeds, demand that all the people profit thereby; and much greater results would be gained if all the seeds were placed in the hands, and distributed according to the judgment of, the Commissioner; for he says that the one-third part left in his charge are not sufficient to make exchanges with those who are working for the good of the Department."

SUNDAY WORK CONNECTED WITH GARDENING.—"J. B.," Fredericton, New Brunswick, calls attention to the large amount of wholly unnecessary work often desired by employers of gardeners on Sunday, in Canada and in the United States.

It is undoubtedly the interest of every person, outside of any ecclesiastical authority, to have one day in seven as free from secular employment as possible. Those who insist on any more labor from their employees than is absolutely necessary, are only aiding in forging a chain that may eventually bind themselves.

On the other hand, many who are lax in their observances of a seventh day of rest from secular work, are so in protest at the ecclesiastical authority that assumes to control individual action. While these different views prevail, unanimity of action is practically impossible.

THE WILLOW OAK.—"L.:" "Can you tell me why the Willow oak is called *Quercus Phellos*? My dictionary tells me 'phellos' signifies cork. In what way is this oak connected with cork?"

We hardly know why this name was given the oak, no work at hand furnishes a clue. Gronovius gave the name of *Quercus Ilex Marilandica* to the tree; and the Cork oak of Europe—the tree that yields the cork of commerce—is a marked form of *Quercus Ilex*, known as *Q. suber*. On the revision of botany by Linnaeus and his contemporaries, it seems to have been the habit to retain as much as possible the names adopted with the literature of the past, and possibly this corkey name, "Phellos," may have been given because the species as indicated by Gronovius, was thought to be related to the Cork oak of Europe. If any friend can supply facts in the place of this guess, a note thereof would be acceptable.

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

THE SUCCESS OF HORTICULTURAL SOCIETIES.—It ought to be clear that the success of all societies of this character depends on the information and instruction to be derived by the members and others who sustain it; and the failures to maintain an existence, come generally from a failure to interest the public.

We have before shown that the failure to draw exhibitors, comes as much from the failure of the society to do them justice, as from any other cause. An exhibitor in these days knows that there is very little honor in "premiums" as things go. In a large number of cases premiums are given because the fruits or plants are the best in the room. Frequently—too often—one can see better in the markets or street corners. Descriptive awards should therefore be made; and the society should not think its duty done when the premium is paid, but should take special pains to do public honor to its successful exhibitor. First-class exhibitors do not take the trouble to compete, when the "premium" is the "be all and end all" of their effort.

But there is another view that we have not before presented, why descriptive awards should be made; and that is, the instruction of the members and visitors. Nine out of ten do not know why an award is made. They take no interest in the awards, unless some personal friend is among the lucky ones. It is a duty to those desiring instruction, that these descriptive awards should be made.

There should be in every society a "Committee on Instruction," whose duty should include all these matters. We are led to these remarks by a passage in the address of the retiring President of the Massachusetts Horticultural Society, Mr. John B. Moore. That society is one that is highly prosperous, and the past year one of its especially prosperous ones:

"Among the causes of this prosperity are the lectures, essays and discussions conducted by the society, which have been of a high order and have given new ideas to the members and others; have informed them of new methods of culture, awakened an interest which is shown in the exhibitions, and given the society a high standing in other places. Much credit is due to the committee on publication and discussion for their efficiency in this work."

This is the experience of other societies that have tried to make their exhibitions instructive. The Germantown Horticultural Society, a local society near Philadelphia, started some years ago under excellent auspices. Its founder and President, John Jay Smith, brought to it the patronage of the best people in the community. On his

withdrawal under the pressure of advancing years, with only the premium plan to rely on, everything went back, the society got heavily in debt, and it was on the point of dissolution. Then a "Committee on Botany" was formed, the duty of which was to give instruction to the members on whatever might be exhibited. This talk the chairman of the committee always gives. The rooms are always crowded to overflowing, and the Society is out of debt and with a handsome surplus in the treasury.

FRENCH HORTICULTURE.—We learn from Mr. Charles Joly, that there is to be a grand Horticultural Convention in Paris on the 4th to 9th of May next, in the Hall of the National Society of Horticulture, 84 Grevelle street.

The subjects to be discussed are much as in our conventions. Transportation Charges on Plants and Trees by Railroads; The Phylloxera; Horticulture in Agricultural Colleges; Influence of Age on the Quality of Seeds; Why do Grapes Shank? Cause of the Disease known as "White-root" in the Peach and some other fruit trees; Grape Mildew; The Advantages of Budding Fruit Trees; What are the best Market Fruits; What Fruit Trees or Shrubs desirable for Food are best suited to poor soils; Chemical Manures; Insecticides; Liquid Manure; Why Seeds of the same age and sowing do not always sprout in the same time; Why is there Difference in the time of Flowering of Trees raised from cuttings, and those raised by division of the roots; Hot-bed Materials; Diseases of Zonale Pelargoniums; Angle of the Rafters in Greenhouses; Advantages of different materials in the construction of Greenhouses; Steam and Water Heating; Barometers, Thermometers, Hygrometers, &c., in Horticulture; The Influence of various soils on the open air culture of Trees.

American Horticulturists in France at that time will receive a cordial welcome.

NEW YORK HORTICULTURAL SOCIETY.—The building known as Horticultural Hall, costing \$110,000, was not found light and airy enough, and has recently been sold for \$75,000—a loss of \$35,000, which has been borne by the bondholders pro rata. The society is looking for another lot on which to erect a cheaper building. Its roll of active members is 553 against 563 last year.

MASSACHUSETTS HORTICULTURAL SOCIETY.—The new President, Dr. Henry P. Walcott, gave his inaugural address on the 2d of January. It was very well received by the members, and his presidency promises to be a very successful one.

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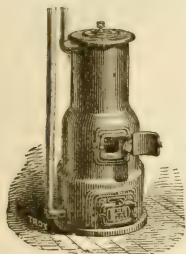
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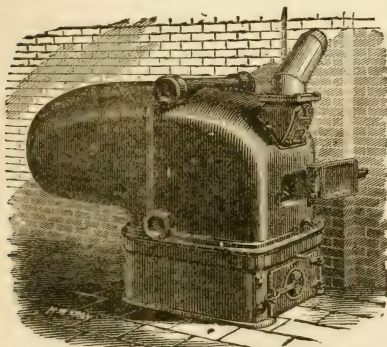


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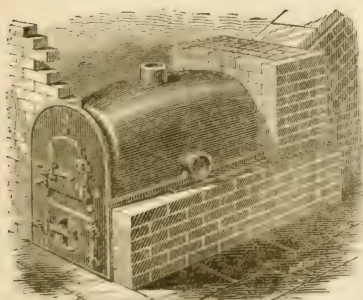


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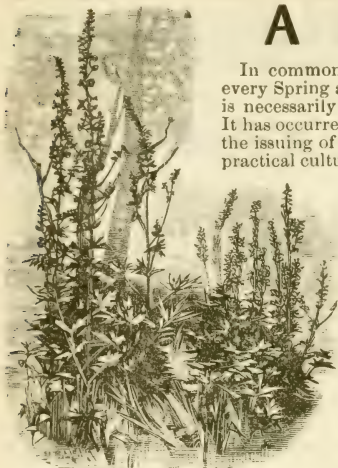
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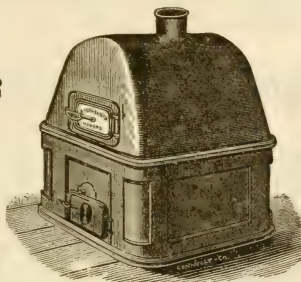
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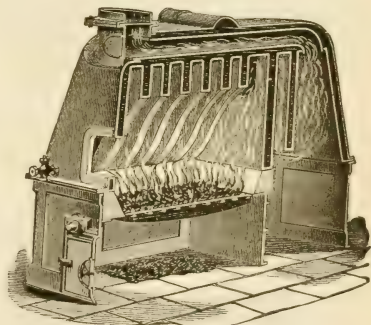
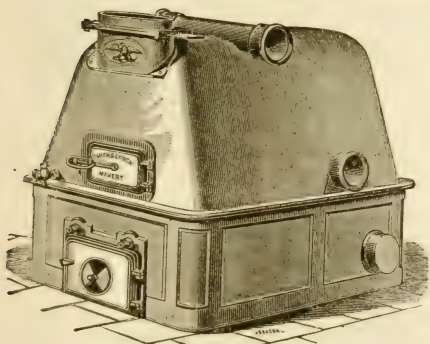


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
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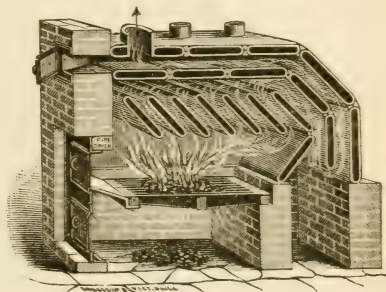
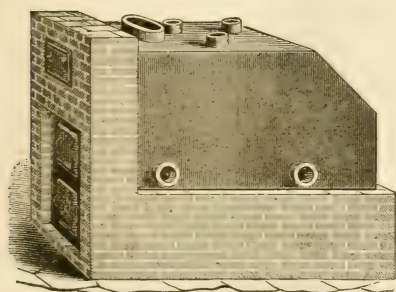
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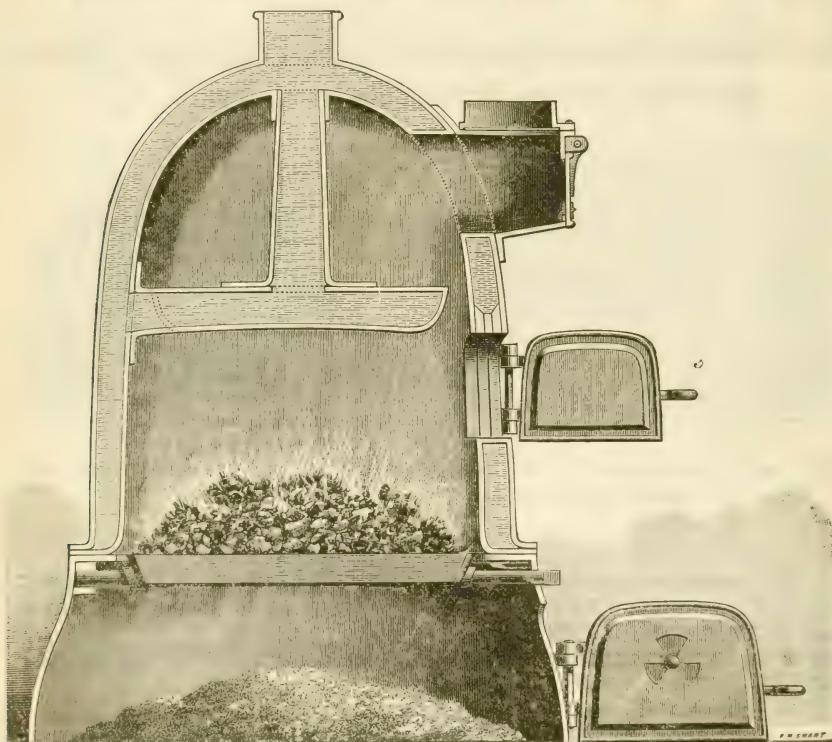
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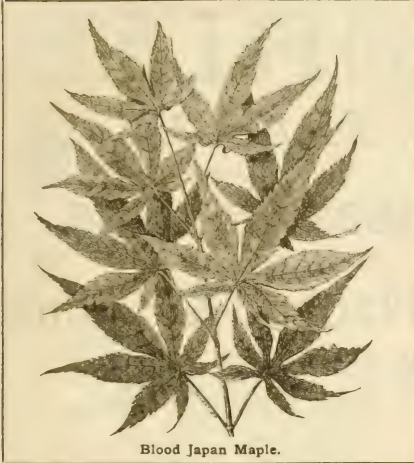
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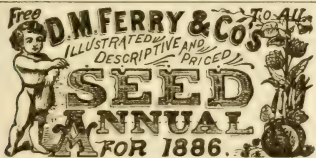
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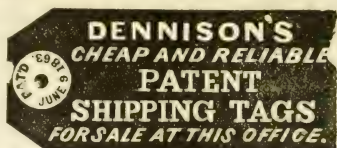
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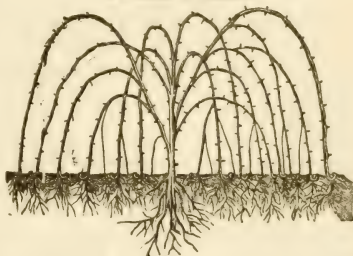
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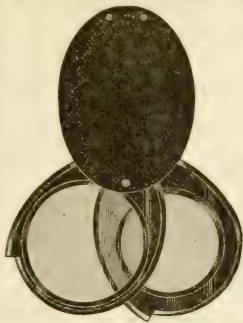
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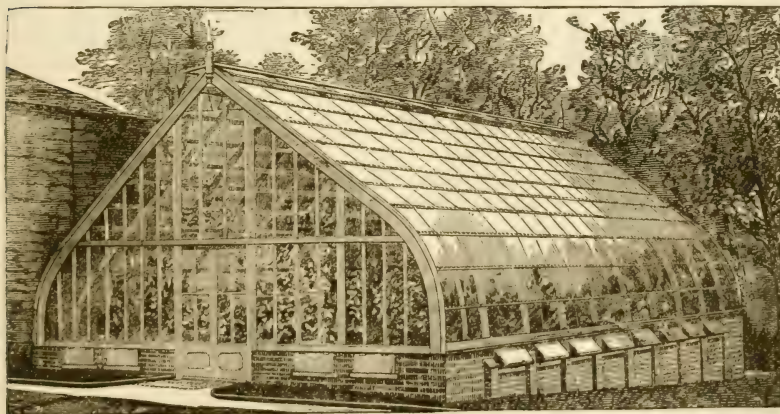
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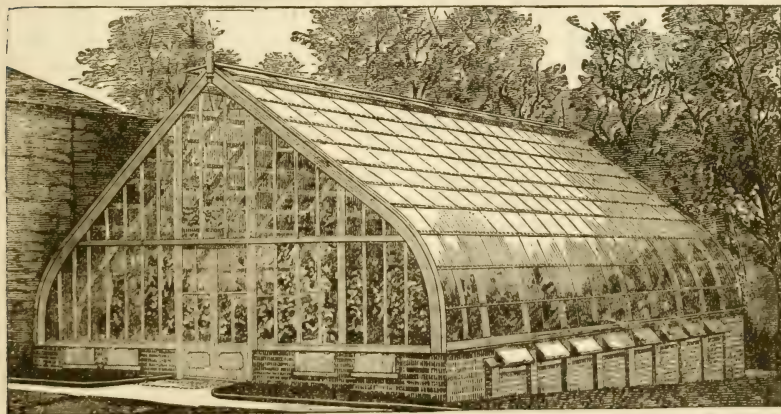
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DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

VOLUME XXVIII.

MARCH, 1886.

NUMBER 327.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

In preparing hints for the month, we have found more difficulty about March than about any other month in the year. We never forget that our readers extend from the St. Lawrence to the Gulf of Mexico, and that the same number which is delighting some one in Lower California, is being as eagerly scanned by some one in Massachusetts or Maine. Hence we have never attempted a monthly calendar of operations, but endeavor to suggest such general thoughts as may be of service about the time the magazine reaches any one in any part of the country. But the period which runs between March and April is just the period when we find the most extremes. It is still ice-bound in many places while in others the Spring flowers are nearly gone. Still, the gardening preparations are not over anywhere, even where begun for the season, and therefore there is much which may be said that may benefit all.

First, this is the season above all others when folks think, if ever they do think, that a little gardening is a very good thing. There is not a person doing business in a town or large city, but wishes he was in the country among the surging life of nature, and numbers do go out wherever some place can be had within a short railroad ride from their business places. Those who cannot,

still work up their little yards, and all do something with the pleasures gardening offers them. The misfortune generally is that entirely too much is undertaken on the spur of the moment, and the constant labor of a large undertaking soon takes away the pleasure with which it began. We advise, therefore, every one who has the spring fever on gardening, not to attempt too much. If he thinks he can certainly care for and enjoy a half an acre of garden, let him make one of but a quarter; and if he has means enough to keep a professional gardener, and is tempted to have twenty or more acres and half-a-dozen men, let him make one of about ten acres, and half the number to care for the garden, and even then, ten to one, he will in the long run find that he has all he cares to enjoy. Lawns, flower beds, walks, garden ornamentation of every kind, should be reduced to a minimum, but then properly cared for and sustained. It should not be, how large a garden? but, how pretty a garden? and it should be a main idea with those who have to employ assistance in gardening, to ask themselves not how much work can we put on those we employ? but, how can we encourage them to maintain every thing in first-class order? We have often seen instances where one man is employed to look after a small garden, and who is expected to look after scores of things which all take time, and the

garden looks bad, till the family begin to wonder "however John employs his time?" Of course there is often reason for this wonder, for there are shiftless employees as well as thoughtless employers; but the great lesson we wish to inculcate is, that much more pleasure will come from a small garden well cared for, than from the largest where everything is ill done, and behind time.

With March, in the Middle States, comes the annual clearing up—the final dressing over the grave of buried winter, and the planting of it with spring flowers and green things. The lawn is always the first consideration, for the "strip of green grass" is often the vivifying germ which warms the citizen's heart into active love for country life. Much as the lawn plays a part in English gardening, it is of much more account with us. Our heats render the grass particularly refreshing. Our droughts are somewhat against our great success—but the charm of having it makes every effort for its attainment desirable.

It is well to remember that good health is the preservative of life, and that good, nourishing food is the key to health. Healthy grass will keep green in a dry time easier than weak grass. This is why top dressings of rich fertilizing materials are such an advantage to a lawn. Continual mowings, though the essential practice in making a lawn beautiful, weaken the grass, but the application of good food helps it to recover. At one time the mowings were left on the grass, to make a fertilizer, as it was said. This is not considered good practice now. The shade from the dead grass weakens the living grass in a considerable degree, though not perhaps to the same extent that mowing does.

As this is the season for work, and not for long essays, we may, perhaps, crowd in a few brief hints from experience, especially as the reasons for them have probably been often given in our pages.

Planting trees will require particular attention now; but do not be in a hurry the moment the frost is out of the ground. Cold winds are very hard on newly set out trees. Wait till they are gone. Always shorten in a little the shoots of all trees planted. They will grow the faster for it, and are more certain to live. Evergreens should be left to the last.

Dig garden soil only when the ground is warm and dry. Do not be in a hurry, or you may get behind. When a clot of earth will crush to powder when you tread on it, it is time to dig—not before.

If perennial plants have stood three years in one place, separate the stools, replacing one-third, and

give the balance to your neighbor who has none.

To make handsome, shapely specimens of shrubs, cut them now into the forms you want, and keep them so, by pulling out all shoots that grow stronger than the others during the summer season.

The rule for pruning at transplanting is to cut in proportion to apparent injury to roots. If not much worse for removal, cut but little of the top away. Properly pruned, a good gardener will not have the worst case of a badly dug tree to die under his hands. In nurseries where these matters are well understood, trees "never die."

Box edgings lay well now. Make the ground firm and level; plant deep, with tops not more than two inches above ground.

Roll the grass well before softness of a thaw goes away. It makes all smooth and level.

Hyacinths, tulips, lilliums, and other hardy bulbs set out in the fall, and covered through the winter, should be occasionally examined, and when they show signs of active growth, must be uncovered; in this latitude this is not safe until towards the end of the month.

COMMUNICATIONS.

IPOMŒA RUBRO-CŒRULEA.

BY CHARLES E. PARNELL.

The reddish-blue *Ipomœa*, *I. rubro-cœrulea*, is a splendid half-hardy annual climbing plant, belonging to the natural order Convolvulacæ, and is a native of Mexico, where the seeds were collected by Samuel Richardson, in the province of Guanajuato. Mr. Richardson presented the seeds to J. D. Powles, Esq., of Stamford Hill, England, who first flowered it, and then distributed the plant among cultivators. It is an annual species of rapid, robust growth, attaining a height of some twenty-five or thirty feet by as much in breadth; this of course depending on the soil, situation, and the amount of care and attention bestowed on the plant. The plant has a smooth stem and alternate pale green acuminate leaves. The flowers, which are very freely produced, are of a fine purplish blue and in axillary clusters, each cluster producing from three to five flowers; the time of flowering depending upon the manner in which the plants have been cultivated.

Where a large space is to be covered by a summer climber, I know of nothing much better than this *Ipomœa*, as it is of rapid growth and stands our hot dry summer weather without sustaining

any injury, and moreover, is perfectly free from all insect pests.

In order to cultivate this *Ipomœa* successfully, the seed should be sown about the middle of March, in a well-drained pot or pan filled with light loamy soil, placed in a warm moist situation as close to the glass as possible, and as soon as the young plants are strong enough to handle they should be transferred into three-inch pots similarly prepared. These young plants should be kept close and moist until well-established, then gradually exposed to the air, and as soon as the weather has become warm and settled—which is about the middle of May—they can be planted outside. Let the place where the plants are to grow be dug to the depth of two feet, and at the same time work in a liberal supply of thoroughly decayed manure. Support should be given the young plants before they commence to run; and during their season of growth they should be looked over occasionally, and the young shoots so trained as to cover the desired space. As soon as hot dry weather sets in, a good mulch of coarse littery manure should be given and a thorough soaking.

Propagation is effected by seeds which are freely produced and ripened from the earliest blooms. The generic name is derived from "ips" bindweed, and "homiois," similar, in allusion to the twining character of the plant; and the specific alludes to the reddish blue color of the inflorescence.

Queens, N. Y., January 4th, 1886.

HESPERALOE ENGELMANNI.

BY MRS. J. S. R. THOMSON.

I have just been the pleased recipient of the above plant, and, as I have never seen it written about nor ever heard of it, I will write and see if others have. This plant is a native of Texas—200 miles from Austin. My plant was gathered by "P. H. O.," who, in September number of *GARDENERS' MONTHLY*, wrote "*Amaryllis of the South*," and who has sent me many rare and beautiful bulbs, natives of Texas, since, but none which I can appreciate as I will the *Hesperaloe*. I will give his description and shall, I feel sure, if I live, enjoy this rare and beautiful species.

He says: "I send you to-day a plant of *Hesperaloe Engelmanni* (or *H. yuccæfolia*) or red flowering *Yucca*—a rare plant which I gathered several years since on the upper Nueces river, 200 miles from Austin, Texas. A dwarf grower, but when well established throws up a flower stalk 7

feet high, with at least one thousand flowers to a stalk, which are smaller than the *Yuccas* generally; purple outside, fine red inside; bell shaped. A few flowers opening each day, which lengthens time of full three months to perfect all of its flowers. Stems and young buds are a purplish color, which renders plant quite showy."

Think of a dwarf plant with 1,000 flowers, similar to our *Yucca filamentosa*; and I feel sure many will desire it as ardently as I, and I hope they may be equally as successful in the procuring of it.

GARDEN AND SANITARY NOTES FROM SOUTH CAROLINA.

BY MRS. D. WALKER.

The unusual frosts which have visited our country in the early part of January have played havoc with our gardens. Plants always hitherto considered hardy in this latitude are either killed outright or so severely injured that their recovery is very doubtful. Camellias in full beauty, covered with buds and blossoms, are pitiable to behold; every bud scorched as if by fire, and the trees browned and their stems twisted. Many of our delicate roses are killed to the ground, and the tops of the *Euonymus* hedges have turned white. In short, there is no end to the destruction of our shrubs and plants; yet, the tea trees are uninjured; they are about the only evergreens in our grounds which have not succumbed in some measure to the cold, except the *Gardenias*, which appear indifferent to heat or cold, one of my large bushes standing in an exposed situation not having changed a leaf.

And now I must speak of our invalid strangers who have sought the balmy air of our village in search of health. None have suffered, and Summerville can boast of an immunity from sickness remarkable in such a winter. Sheltered from the east wind by live oaks and towering long-leaved pines, the rain may come and the rain may go, for the porous soil absorbs the moisture and the numerous little water-courses carry off what the sand cannot quickly enough receive. We certainly do sometimes have deluges of rain, soon to be followed by blue skies and delicious sunshine—days that are as heaven to the sufferer who basks in the fragrant air or walks bravely forth day after day amazed at the delightful climate.

That there is something marvelously healing in the atmosphere of the pines we realize more fully each succeeding year, and in lung and throat diseases the cures here are numerous.

My family came to reside here most unwillingly, but a member of it had been troubled with a throat affection, which promised to become serious, for over two years; he had sought the advice of many good physicians North and South. Finally he was advised by a Charleston doctor "to live in Summerville;" his recovery was rapid and he is to-day a healthy man.

A gentleman from Ireland brought introductions to Charleston—on his way to Florida. He was told to visit Summerville, if only for a week. He came, with hectic fever, a hard dry cough and panting breath; had no great comfort in the small wooden house where he boarded, and where the fare was as unlike as could be to the dainty food of a wealthy home. After visiting Florida he returned here at the end of a week looking decidedly worse than when he left, which he attributed to the fatigue of the journey in such a warm soft air, for thus he described the languor of the climate. After some weeks he bought a horse, hunted deer, etc., and remarked one day, "I breathe here, and I haven't breathed comfortably for two years."

If I remember rightly he came to Summerville about the first of November, and left us for Europe in the middle of the following May—a well man, and he writes, "I am quite well, have no trace of my former illness; manage my own property," etc.

Our local physicians are very urgent in entreating their patients who reside in any of the Northern States not to hurry away at the first breath of spring, but to remain with us till at least the middle of May, the heat being quite bearable till the latter part of June. This, unfortunately, many will not do; the consequences to the newly healed lungs we leave to the imagination of the reader.

Summerville, S. C.

GIANT VERBENAS.

BY W. F. MASSEY.

Ten years ago while dining with a friend at Waverly, Maryland, one of his sons brought from the greenhouse a head of Verbena flowers, which in size exceeded anything that I had ever seen. Its color was a brilliant rosy pink, and the individual florets were an inch in diameter. I was informed that it was a new seedling just raised by Mr. John Garvin, a florist then living at Oxford, a suburb of Baltimore. I at once visited Mr. G., and made arrangements which resulted in the new seedling being sent out under the name of Beauty of Oxford. Mr. Peter Henderson, to whom

I sent this variety in the fall of 1876, at once saw the possibility of making it the parent of a new race of giant Verbenas. His efforts in this direction have been remarkably successful of late years, and a few days ago, when visiting his establishment, he showed me a large house filled with the new strain of Mammoth Verbenas, all descended from our old Beauty of Oxford, through its remarkable descendant, America, which Mr. Henderson raised two years ago. If the new set of fourteen Mammoths which Mr. H. sends out this season equal Beauty of Oxford and America in size, with their great variety in color, it would seem that the limit in Verbena improvement has been reached. I am sure your readers will thank me for calling attention to this remarkable improvement in an old favorite flower, which has been fast falling into disuse as a budder, but which will undoubtedly get a fresh popularity from these new sorts.

Chestertown, Md.

SWEET PEAS.

BY HERBERT HARRIS.

Your number of January contains an article—"How to Grow Sweet Peas." If it will be of any service in your latitude, I will note my experience for the past 30 years. My hedge of sweet peas is always the admired of all admirers.

Now as to seed, I use separate colors, always giving the preference to white and scarlet; the mixed seed of most dealers being particularly deficient of these varieties.

As soon as the frost is out of the ground (sometimes have even broken through a crust) I open a trench, say 18 inches wide and 20 to 24 deep—length of spade, handle and all. This I wheel to the other end of my ground, the object being to have it to fill up the last length of the trench. I then put in the top spit of the next length and same width, and also a good dressing of cow or other strong manure, mixing well with what is already in the trench. Then the bottom of the last-named length of the trench is thrown on top of the first soil, and if poor, mixing a little half-rotten stable manure through it; and thus proceed through the length of the ground required. The condition of the soil will not allow for much dressing; therefore, I draw a furrow about 6 inches in depth, endeavoring to have most of the loose soil thrown on the north or eastern side. This protects largely from cold winds. I then sow my seed very thick, using about half pound of seed to every 20 feet of row; cover with fine compost and tread

firmly in the furrow, leaving the soil around as loose and rough as possible.

As soon as the plants are nicely up, I give them a good sprinkling of slaked lime—commonly called quick-lime—and as they advance in growth earth up as required. If the weather should be very wet at any period of the growing season, I give another application of lime. If, on the other hand, a continuance of dry weather should occur, a good watering should be given; but it is seldom necessary where the plant has a good depth of soil wherein to feed. Removal of the seed pods as they form, strengthens the plant and prolongs a fine bloom. By above practice, I never fail to have magnificent blooms of glorious color and marvellous size.

An early English practice was, to sow very early in pots, and plant out as soon as weather permits; but from comparative dates of blooming, not more than four to six days was gained in their flowering. I only adopt this last method in handling new varieties. Then by sowing early in pots I am enabled to propagate from cuttings, thus increasing stock of plants, which is very desirable, as seeds of the new sorts are very expensive.

Nursery, Halifax, Nova Scotia.

ACCLIMATIZING PLANTS IN TEXAS.

BY P. H. OBERWETTER.

The acclimatization of exotic plants is an interesting undertaking, but it is rather an expensive indulgence, because the catalogues of plant and bulb dealers are so large that one's purse will be exhausted before the catalogues are. The writer of this has made some experiments to acclimate exotic plants, particularly bulbs, and has some more under trial and will make the result known to the readers of the *GARDENERS' MONTHLY*; but he would like also to profit occasionally from the experiments of others, and would politely ask readers of the *GARDENERS' MONTHLY* in the South to send from time to time their success—and also failures—to this magazine, that others may learn wisdom, and, as the case may be, save money. For the reader of this magazine should not only be a consumer but also a producer. The Editor can not make up the whole magazine and tell the readers that this plant will grow here and the other there; this is left to the flower lovers to find out for themselves. A few only of the Southern States are represented by correspondents. Mrs. Thomson, of Spartanburg, ably represents South Carolina; Texas is represented by Munson, of

Dennison, in the north, Onderdonk in the south, but Mrs. Byers, of Houston, has been silent for a long time. But where are the other States—Virginia, North Carolina, Alabama, Mississippi?—are there no florists in the South? or do they keep all that they find out for themselves?

I have already let the readers of this magazine know what *Amaryllis* are hardy in the South. I have tried other bulbs and here is the report. Several years ago I wrote in *GARDENERS' MONTHLY* that I could not bring to flower *Alstroemerias*. I had a plant which refused persistently to bloom; finally, becoming tired of it, I gave it away. A friend of mine had exactly the same experience, but he put his plant in the garden; it established itself and flowers every year and increases like a weed; since that time I have it also in my garden. It has the habit of sending up a few shoots in autumn, but no flower shoots—these are killed later by frost; in spring again it commences to grow, and at the end of its growing season, which is here in May, it sends up the flowering shoots and soon after dries up to rest till autumn.

Another tropical bulb I cultivate in the garden is *Pancratium ovatum*. This bulb is evergreen with broad leaves. Cultivated as a pot plant it flowers regularly in August with the new growth of leaves. The leaves are of course in winter killed by frost. I planted the bulb in the garden in the summer of 1883, it flowered at its usual time; in the summer of 1884 it produced no flowers, but last summer the flower spike appeared again; but the plant waited till September when rain set in.

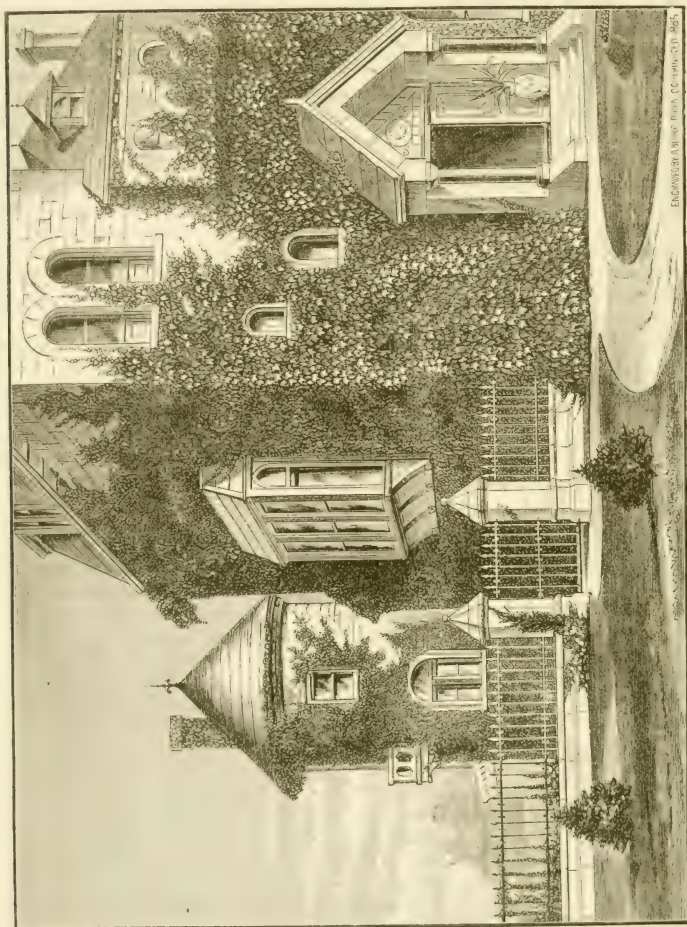
Urceolina aurea is a fine plant, somewhat in the style of *Eucharis Amazonica*. It bloomed with me in October, 1884; I then set it out in the garden as it did not produce new leaves with the flowers, and I have no doubt that it will do well in open ground.

Phædranassa chloracea and *P. gloriosa* are also cultivated in the garden by a friend. They become stronger apparently every year, and no doubt will make themselves at home.

But now the failures. Failed entirely with *Ixias*, *Babianas* and *Sparaxis*, and I venture to say that *Gladiolus* does not thrive in this part of the country. Bulbs become fewer and smaller every year unless watering is resorted to. This is because the interval is too short from the time when it is warm enough to make them grow, to that which it is too hot for them. Unless they are abundantly supplied with water in the later stage of their growth little enjoyment is derived from their cul-

ture. The same may be said about Anemones and Ranunculus. If these are planted in autumn our alternate warm and very cold weather draws them out too early and kills them. If planted end of January they come into bloom so late that they

to the notice of horticulturists by those famous cultivators, the Messrs. Veitch, of Chelsea, near London, who exhibited a specimen at a meeting of the Royal Botanical Society on the 27th of May 1867. The original plant still occupies its position



Ampelopsis Veitchii.

suffer from heat and will need frequent watering in their flowering season. *Austin, Texas.*

EDITORIAL NOTES.

JAPAN AMPELOPSIS. It is now nearly twenty years since this beautiful creeper was introduced

on the house of Mr. Dominy, so long known for his faithful service with that firm. It is commonly known as *Ampelopsis Veitchii*, the name under which it was then exhibited, but had been named previously *Ampelopsis tricuspidata*, which is therefore the correct name. Only for the fact that the genus *Ampelopsis* is regarded as distinct from

Vitis—the true grapes—its name would probably be *Vitis Japonica*, under which name it appears to be described in Thunberg's *Flora Japonica*. His description fits some of the varying phases of this plant. He says it is called in Japan "Tsta," that is to say "The Ivy." In America it is commonly known now as the Japan Ivy. It is botanically a singular plant, the leaves being sometimes in threes, sometimes merely three-toothed, from which it gets the name—*tricuspidata*, and sometimes heart-shaped as described by Thunberg. Another interesting fact is that it is only every third leaf that has a tendril opposite to it, and that third leaf has no axillary bud as in other plants.

Its interest to horticulturists is universal. It covers a wall or fence, and so smooth and evenly that the famous English Ivy could do it no better. The English Ivy however, claims the advantage of being always green. Though this is not evergreen it takes on such a beautiful crimson and orange color in the fall, that one is quite reconciled to the absence of foliage for a few months.

Its only known enemy so far is a disease similar to fire blight in the pear, in this that it only attacks the branch for a few inches in one place; but the result is to make the whole portion above for perhaps many square yards have yellow tinted foliage, which, during the winter following dies. Those who do not look deeply into phenomena, then consider the plant "tender." Fortunately, as in the case of the fire blight in the pear, it is only the part above the point of attack that suffers and sprouts from below come out and soon cover the spot where the other has been killed.

The cut which accompanies this has been kindly loaned, in order to illustrate our chapter, by Mr. A. Blanc.

TROPICAL BEDDING.—The employment of such hot-country species as *Dracænas*, Bananas, and similar plants, for the summer decoration of gardens, and which attracted such marked attention on the Centennial grounds at Philadelphia, has not been continued to any marked degree, probably because it takes less trouble to get up the carpet or mosaic beds. But the effect is so charming that those who can afford, should have more of it. In Europe enormous quantities of *Dracæna indivisa* are used, and even for the centre of mosaic beds a plant of this is usually employed.

THE VERBENA.—The disease that is so great a foe to the lovers of Verbenas in America, is just as troublesome in the Old World, and M. Duren says

there it is now the custom to raise the plants yearly from seed, as they do annuals; all the cultivated forms have been derived from the species *Chamædrifolia*, *melindroides*, *teucroides*, *phlogiflora*, *Tweediana*, and *paniculata*, natives of Chili and Peru chiefly.

AN EARLY AMERICAN MOWING MACHINE.—According to the minutes of the American Philosophical Society, John Jones exhibited at the meeting of November 1st, 1771, a plan whereby a number of scythes could be worked by one horse, but the details of the plan are not given in the note. He exhibited a model of his machine on the 6th of December.

SCRAPS AND QUERIES.

GRAFTING THE SALISBURIA.—A correspondent desires to know whether the *Salisburia* or *Ginko* tree will graft at this time of the year (Jan. 19).

If the work is to be done on trees in the open air, grafting cannot be done successfully till growth has commenced. In all grafting there is danger of the graft or scion drying out, unless there is activity enough in the stock to furnish the moisture that the graft requires. It is found best in all grafting to keep the scion back a little in order that the stock may be certain to have the supply the scion requires. In winter grafting the work can be done if the stock is somewhere where the temperature is above freezing point, so that the active action of the stock be not wholly suspended.

THE ATAMASCO LILIES.—Mr. "J. H. S.," New Haven, Conn., writes: "*Zephyranthus Treatæ* sold by florists has small, scant foliage, and blooms at different seasons of the year; I have it in bloom now. It seldom has but one or two flowers open at once; increases readily from seed. *Z. candida* if crowded in a pan will give as many flowers in August as there are bulbs, and is a useful and beautiful plant. I have seen another variety from Florida which I supposed was *Z. Atamasco*, but have never grown it."

[This note is useful as showing that some one has evidently given the name of "*candida*" to a form of *Zephyranthus Atamasco*—a point as to which we had some doubts recently. The true *Z. candida* of botanists is something else; and again, it shows that a *Zephyranthus* very different to the one described by Mrs. Treat originally has obtained wide circulation.—Ed. G. M.]

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

This is the season when most plants will require re-potting previous to their making their new season's growth. The difficulty always is to find the increased room that re-potting requires. Usually room is made by turning out the bedding plants into hot-bed frames, protecting them from frosts at night by mats. Much may be gained also by not increasing the size of pots, as pointed out by a correspondent, but merely changing the soil; where, however, plants are not shortened in previous to the re-potting, care must be exercised in shaking out the soil, or serious results may follow. The ball of roots should be soaked in water, so that the particles of soil may fall away easily from the roots. The soil for potting, too, should be nearly quite dry, and then rammed into the pots about the roots very hard and tight. Immediately after potting the plant should be well watered, and placed in a close and partially shaded atmosphere till the roots take hold of the new soil again. Where the roots are not much disturbed these precautions are unnecessary. In addition to dry soil for potting it should be fibrous, that is, it should have a good portion of old fine roots through it to give a spongy texture. It is this which gives the top soil of a pasture such value in the eye of a good gardener for potting purposes, as the innumerable fine roots of the grass through it render it particularly spongy or "fibrous" as the technical term is.

As the plants potted grow, those intended to be made stocky or bushy, should have their strong shoots pinched off, which will encourage the strength of the weaker ones.

The direct rays of our hot March suns are very fatal to flowers, and they soon fade unless protected. A portion of the house should have its glass shaded, and where it is desired to prolong the bloom the plants should be removed under it. A thin paint of sugar of lead on the outside is the most permanent and best shading for glass.

Pansies are now coming into flower. They like an airy frame, where they will not be roasted at midday nor exposed to drying winds, and yet have a free circulation of air and plenty of light. Planted out in such a frame, and the old shoots cut away as soon as the plant has done flowering, the plants will keep healthy over till the next season.

COMMUNICATIONS.

PRIMULA FLORIBUNDA AND P. OBCONICA.

BY GEO. W. OLIVER.

Primula floribunda.—This charming floral gem was first distributed to plant cultivators four years ago by the late John Sadler, of the Royal Botanic Garden, Edinburgh. It was raised from seed sent by Mr. Lister—a former employé of the above-named establishment—from the Himalayas. In Europe it has already become a great favorite, not only with botanical enthusiasts but also with florists. In most respects its appearance is totally distinct from, and with the exception of *P. acaulis* and varieties, much more floriferous than any other species in cultivation.

My experience with it is, that, although it is perennial, it will repay the trouble to treat it as an annual or biennial grown for winter flowering. It seeds freely and if sown by the beginning of August we have the plants in flower before Christmas. The flowers are bright yellow, arranged in whorls, there being sometimes as many as eight successive whorls on a single stalk. As soon as the seedlings permit of being handled, they should be potted singly into thumb pots and shifted on as they require it, using sandy loam until the last shift which should be into six-inch pots, when a goodly portion of thoroughly decomposed cow manure may be added, potting very firmly.

P. obconica—we may safely predict, has also a great future before it, it is extremely susceptible to cross-fertilization and from what I have already seen of its tendencies to improvement from that cause, we may hope soon to see it competing for popular favor with the well-known forms of *P. sinensis*. It may be described as a capitata species, but when well grown it sometimes assumes the whorled form, sending up a second truss from the center of the first umbel. The flowers are white, faintly tinged with lilac and beautifully fringed after the manner of some of the varieties of *P. Sieboldii*, (*Cortusoides amoena*.) It is a native of Japan, having been quite recently introduced by the Messrs. Veitch, London, through their late collector, Mr. Maries. The treatment essential to its requirements will be found to coincide with that accorded to *P. sinensis* and varieties.

U. S. Botanical Garden, Washington, D. C.

NOTES ON WINTER-FLOWERING BEGONIAS.

BY CULTIVATOR.

Wherever flowers are grown during the winter season, either for the embellishment of the greenhouse, the dinner-table or the parlor, a few of the best of these should receive a place, their drooping fuchsia-like flowers claiming admiration, whether seen in the flower vase or drooping gracefully from the parent stem. To see them at their best they should be grown in a temperature of about 60°. Cuttings struck about the end of May, if well cared for, form handsome little plants in 5-inch pots by the end of the season, which I think are always preferable to the "lanky" specimens so often seen.

The following are some of the best which we have found amenable to culture in small pots. Among the scarlets, *Fuchsioides* has no equal when well grown, but is a shy bloomer unless treated to plenty of heat. Is at its best about the holidays. The white variety of this is very useful in large pots to cut from, but is too gross a grower for small pots. *Saundersonii* is about the first to bloom in the scarlet section, beginning in October and continuing without intermission all winter if kept growing. This is one of the very best for growing in small pots. *Digswelliana* is very much like the preceding, but more round in the foliage, and opens its flowers well. *Metallica* and *M. incarnata* are both beautiful in flower and foliage, the latter showing up panicles of rich rose-colored flowers in beautiful contrast to the dark foliage flowering in December. The rich metallic leaves of the former are in themselves useful in a cut state, edgings to flower vases. This is a spring flowering variety with rose-colored flowers covered over with miniature glittering hairs, giving it a beautiful rich appearance. *Parviflora* and *Wel-*

toniensis may be termed perpetual bloomers. The former is of compact growth with small foliage and always covered over with pure white flowers. The latter is a light pink and one of the very best. Has a very pretty effect seen under gas light, the reddish green leaves being almost transparent, with red leaf-stalks. *Schmidtii*, a compact variety with pretty metallic foliage and white flowers, is very desirable. *Rubra* has dark green leaves with immense clusters of scarlet rose colored flowers, and is one of the best winter-flowering Begonias grown. *Manicata* and *Sanguinea* are sometimes classed in the ornamental leaved section, but they are also beautiful flowering subjects, bearing in the spring numerous panicles of pinkish

white flowers on long erect stems. As a foliage plant the latter is beautiful, almost completely hiding the pot in which it is grown and forming a complete globe of olive-green leaves with rich crimson underneath. There are several other varieties well worth growing, but not being under my care at the time of writing I have only noted such as have given me satisfaction during the present season.

South Virginia.

[It will be a good illustration of this excellent article to give a cut of the new



New Double Begonias.

Double Begonias which are now attracting so much attention in Europe.—Ed. G. M.]

NOTES ON SOUTHERN GROWN ROSES.

BY W. C. WILSON.

My experience for the last thirty years in importing Hybrid Perpetual Roses on their own roots, which I have done considerably from France, England and Germany, has been a complete failure; no matter what the age of the plants was, or the prices paid for them, they never had the vigor, constitution, or growth, of those that parts of Georgia produce; and probably in a

great many more sections of the Southern States like results could be obtained if tested. Parts of Georgia seem to be some of the best known sections for that purpose. The mode of propagation is so cheap, that when the grower gets in quantity the sorts required for our Northern market, I consider that it will stop shipments of roses from, and perhaps send roses to Europe on their own roots; as I consider that good plants can be grown for less cost in this, than in any other section of any country that I have ever heard of. When pruning in my Hybrid Perpetual Rose houses, the latter part of November last, I sent all the wood for cuttings to a florist in Savannah, Geo. A friend of mine returned from that place January 8th, 1886, and states that there was any quantity of the cuttings rooted before he left there. Cuttings are likely to make plants three to five feet high, by next Fall. They are grown as follows: the cuttings are planted in rows about six inches apart with a space of about three feet between each row; and if the cuttings are put in at the proper season and the ground kept clean from weeds by a horse cultivator, (scarcely any hand labor being required after the cuttings are planted) they will have from 90 to 95 per cent. to grow.

There is no other place that I have ever heard of where the same results could be obtained for the same cost; and I consider that if the same energy, ability and capital were invested in a Georgia rose nursery, that there is shown in some rose nurseries in France and England, the results in profits would be much greater, as they make better plants in one half the time and are on their own roots, which is generally preferred, except in very few varieties. *Astoria, L. I., Jan. 12th, 1886.*

STEAM HEATING.

BY BAPP & CO.

Since the columns of your valuable and instructive magazine are becoming somewhat interesting in the direction of cheap greenhouse heating by steam, we consider it our duty to offer in evidence, our success and practical knowledge. In regard to Mr. Stover's article concerning the heating of Mr. Hippard's establishment at Youngstown, Ohio, we have this much to say. That we have been to see his place, which we consider one of the finest commercial establishments in this country, not only in structure, but stock and everything connected. The size of his place is, we think, fully what Mr. Stover claims for it. We

are about to add to our place, Mr. Hippard's novel invention, that cannot help but become a necessary article connected with steam heating. The apparatus is an alarm bell which can be adjusted to any pressure desired, by moving a weight; and when it is set, say at one pound of steam or less, and the steam comes below that pressure, it rings the alarm and wakens the fireman who may have accidentally fallen asleep, thus avoiding—unusual occurrence—chilling or freezing the plants.

In regard to our establishment, we will say this much. That we have 8,000 square feet of glass surface. That we heat with a small to horse power locomotive boiler. Attached to it we have over 3,500 lineal feet of $1\frac{1}{4}$ inch gas pipe. Our fuel is what is brought out of the mine, called run of the mine; and according to what we have thus far used, we will consume about forty tons, at a cost of \$1.25 per ton, delivered at our place. However, our apparatus did not give us any satisfaction whatever, and we commenced to correspond with Mr. H.; and he gave us drawings, but could not get the results necessary, until on last Thanksgiving Day we called upon Mr. H. at his place, and went home with some points; and have now, we consider, as nice a working steam apparatus as we can wish for. Everything is working like a charm. We found Mr. H. a florist among florists. For all of his trouble making drafts and corresponding, he would not allow us to contribute one cent towards his expense and trouble. Such generous men are bound to win, if generosity has anything to do with success.

Cumberland, Md., January 30th, 1886.

HEATING SMALL GREENHOUSES.

BY HERBERT G. WALKER.

Many lovers of flowers would like to have a small conservatory or greenhouse but are deterred by the expense and trouble of heating. The following method of heating was related to me by a gentleman who saw it in practical operation in a greenhouse about 15 by 20 feet in size. He said the same plan was used to heat street cars in one city in the East (I believe it was Philadelphia), but it did not work so well, on account of the street cars going up and down grades.

The plan was this: An iron pipe was put under the benches and around three sides of the house, the part farthest from where the heat is placed to be the highest and a regular fall all the way around to the lowest end; at the lowest end the pipe is closed with a thin piece of sheet iron which

is placed so as to be over a gas jet or a lamp. In the pipe is placed from a quart to a gallon of salt water holding as much salt in solution as possible. Both ends of the pipe must be closed. When the water is heated by the gas jet or lamp it heats the whole length of pipe. This method would be splendid for heating pits, hot beds, etc. I expect a four-inch pipe would be the best size.

I do not vouch for the above, but simply state it for what it is worth, and would be glad to hear from any one that has tried the plan. It is entirely new to me but may be well known to some.

New Albany, Indiana.

THE CANNAS AS POT PLANTS.

BY JEAN SISLEY.

Several years ago I related in the *Gardeners' Magazine* the history of the Canna. Since then it has been more cultivated in private gardens, but not, in my opinion, as much as it deserves. Several very fine varieties have been raised in our neighborhood; and, what is worth noticing, by artificial fecundation the size of the plants has been very much reduced and the quantity and size of the flowers increased.

The old and tall varieties are still very worthy of attention as ornamental plants for the open border, but the new dwarf ones which measure about 3 to 4 feet in height are very fine as pot plants for indoor decoration, as they contrast with all other sorts. All those dwarfs have been raised by Crozy, of Lyon, who, since the introduction of the species from Brazil, in 1846, addicted himself to their improvement.

The culture of those dwarf Cannas is very easy. To succeed, stout parts of the tubers bearing a good eye must be selected and potted about February. They can be potted later, if required, as long as the tubers are at rest. They must be put in the smallest possible pots; put on slight bottom heat in a pit, or a two-spanned-roof house, that they may receive much light, and be aired when the weather permits and frost is not apprehended.

As soon as the pots are filled with roots they must be re-potted in a larger size, without disturbing the roots, and so on successively until they show their flower spikes, when they can be removed indoors or under a veranda. They can also be used for table decoration, as the leaves contrast handsomely with those of other plants.

The following are the best and most distinct to my knowledge: Amiral Courbet, yellow, striped carmine; Bethe Suze, large, light yellow shaded,

light crimson; Capricieux, reddish-purple, edged yellow; Commandant Riviere, light yellow spotted, light red; Edouard Morren, light yellow, shaded dark rose; Madame Just, light red, edged yellowish; Olbius, bright red; Tonkin, bright yellow, centres potted crimson; Victor Gaulin, bright red, shaded darker, which attains about 3 feet high when in bloom. All these Cannas require good watering, and when in a growing state with liquid manure.

Monplaisir, Lyon, Jan. 1886.

[In most parts of the United States they thrive so admirably in the open air in summer that they are seldom used as pot plants; but these dwarfs should make fine pot plants.—Ed. G. M.]

EDITORIAL NOTES.

VRISIA HIEROGLYPHICA.—This is one of the most remarkable of variegated or foliage plants. It belongs to Bromeliaceæ or pine-apple family of plants. The leaves are in shape like short and blunt pine-apple leaves, but are continually cross-barred with brownish violet figures that have some resemblance to ancient hieroglyphics, whence its specific name. It seems to have been introduced into Belgian gardens from Brazil.

JAPANESE HOUSE GARDENS.—Some time since, you figured two specimens of these from a work brought home by Mr. Mosely. It so happens that I have a Japanese pupil attending my lectures, and who has been a frequent visitor at my house for the last five years. With the help of this gentleman—Mr. Nagai—I have inspected two of the volumes which Mr. Mosely has been so good as to send me. These books were described as a "Treatise on Miniature Gardens," but they are descriptive of aquaria which are introduced from China. According to Mr. Nagai, the Japanese (at least at this time) are inferior in their art to the Chinese. Peking is to the Japanese what Paris is to the Germans, and, indeed, to the other nations of Europe. As we look to Paris for the height of good taste and fashion, so the ladies of Japan dress themselves after the fashion of the Chinese nobility.

These Japanese aquaria differ from ours in many particulars. Ours are for the most part formed of curiously-shaped limestone or slag under water, or with only the upper part above the surface, and they are placed under a glass frame or in a large glass jar; but in Japan a hard stone in rock-form is used and placed in an earthen vessel full of sand. We use delicate water plants, lizards, molluses, etc., which live in the water,

while other people plant gay leaves, Begonias, etc., on the top of the rock above water. The Japanese use, as already said, dry rocks; on the sand around the rocks lie cleverly made boats, as the sand is intended to represent water. The miniature plants which are placed in various parts of the rocks are planted by the Japanese very skillfully. Many Conifers, especially *Sciadopitys verticillata*, *Pinus Massoniana*, and certain *Thujas*, play a prominent part. The rocks, which are scarcely 1—1½ foot high, are often like large barren rocks, for they are generally formed according to one regular rule, pierced with holes, and filled up with water, as if they were mountain lakes. In the large aquaria rocks are used, and water also flows at their feet, as the rocks represent islands. Little ships sail on the water, and various tall plants, such as Bamboos, Palms, and the like, or small plants are planted at the water's edge. Sometimes the rock is done away with, and an old rugged tree, often a Conifer, occupies most of the space, or the aquarium represents a whole landscape, with rocks, trees, and little houses. The rock may also represent a landscape, with houses and little villages placed at the foot or at a certain height on it, and planted with groves or single large trees. It will also be understood that, all things being on a small scale, little figures of men are also used. A great variety is to be seen on these rockworks, as the form of natural rocks is exactly imitated. As we recognize in nature the form of the rocks, so also is it in these clever miniatures. The various limestones, slates, stones are easily recognized as tufa, stalactites, and rocks full of water.

In the beginning of one of these books I find a plate with Chinese in various attitudes, stags, &c., to be imitated in clay. This shows that not only the Japanese, but the Chinese, are reproduced in these aquariums. The next plate gives various designs of buildings and temples, bridges with men on them, boats and ships in the distance. These also are Chinese, not Japanese, so that the Chinese origin may be easily observed.

Finally, I must state that I have given the name of aquaria to these rockworks, only in consequence of the custom of placing them in rooms; they are not aquaria, according to the generally recognized sense of the word. The Japanese term is untranslatable, the nearest approach to it is "miniature rock gardens for rooms." They are just at present so much the fashion in Japan that they are to be found in the dwellings even of the poorest classes.—*Karl Koch, Berlin, in Gar. Chronicle.*

THE LIGHTING OF CONSERVATORIES.—A small pamphlet on "Petroleum Gas" has been forwarded to us from Belgium, advocating the use of gas distilled from crude petroleum or from the tarry residues of mineral oils for lighting purposes, particularly in horticultural structures and wherever else the fumes of coal-gas are more than ordinarily obnoxious. According to the showing of the writer, M. L. Jacques, engineer, of Seraing, near Liège, the advantages of petroleum gas are many. The distillatory apparatus required is comparatively small, simple, and cheap. The gas is not more explosive in its nature than ordinary coal-gas. In density it approximates closer to common air than coal-gas, so it is more easily led in any desired direction. It does not foul pipes or burners. It burns with a pure, steady, white flame, with eight times the illuminating power of an equal volume of coal-gas. As mineral oil contains neither sulphur, nitrogen, or oxygen, the gas prepared from it is free from admixtures to which the deleterious effects of coal-gas are due. The gas burns with about the same amount of heat as coal-gas. Its composition approximates to $C^4 H^4$ —that of coal-gas, freed from all impurities, approaching to $C^2 H^4$. Carbonic acid is therefore evolved in larger volume than with coal-gas; but as eight times less gas is needed to produce the same amount of light, the heating and deterioration of the surrounding air are proportionately less. A hundred kilogs. (220 lbs.) of crude petroleum give about 2,600 cubic feet, and the same quantity of tarry residue of petroleum 1,900 cubic feet of gas. The gas undergoes no alteration at a pressure of ten atmospheres, so that it is well adapted for storing by compression in portable meters for use in railway trains, etc. M. Jacques states that the town of Seraing, with a population of 26,000, has been lighted for the past eight years with this gas. The apparatus is worked by one man, and supplies 22,000 cubic feet of gas in ten hours, or double that quantity in twenty-four. There are 46,000 feet of pipes; the farthest lamp is 3,300 feet from the works. A certificate from the burgomaster shows that the cost to the town in 1872 was 2½ centimes per burner per hour, each burner, without reflectors, being equivalent to fourteen wax candles. The same system was adopted in the city of Neuport-Bains last year. Very favorable reports have also been received from the large shipbuilding yards of Messrs. Cockerill at Antwerp, and other public and private establishments where the gas has been introduced. Dr. Jaimain, of the Ophthalmic Institute

at Liège, speaks highly in its favor. It gives a very brilliant but very soft flame, he says, which is explained by the large proportion of blue and violet rays, always the coolest and most soothing to the eye, which it contains. No particulars are given of the application of this mode of lighting to horticultural purposes beyond the statement that it has been tried in several large conservatories and found to answer perfectly, and that in one such instance a conservatory with an area of 640 square feet was lighted with ten burners.—*Gardeners' Magazine.*

SCRAPS AND QUERIES.

FEET OF GLASS.—Mr. Hippard says: "I have noticed the article published by you in January number of *GARDENERS' MONTHLY* as an editorial. You have made a grand mistake when you say the way in which the glass is used would enable 25,000 feet to be used in this way instead of 12,000. This is not the fact; Stover says that we

could put on our lot 25,000 square feet of glass, and any neighbor can truthfully say that our lot is half covered over with glass, thus making upwards of 12,000 square feet used to propagate and grow our plants,—or about one-half of our ground covered by glass."

DISEASED ROSES.—"F. J. K.," Ottawa, Ills., sends specimens of what is known here as the Black fungus or Black mildew. The leaves, especially the young ones with the tender shoots, turn black and die with a soft kind of rot. There is no known cure for it, because the injury proves fatal before its existence is discovered.

There is little doubt, however, that the plants that get the disease have been weakened in their vital powers before they get the fungus in its developed state, because some varieties suffer so much more than those with vigorous constitution growing under the same conditions. The only cure therefore lies in efforts to give these weak brethren the benefit of those general laws of health which those who have made plant life a study have explained to us.

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

In fruit growing, remember that fruits are like grain and vegetable crops, in this, that they must have manure to keep up the fertility. Unlike vegetables and grain, however, their feeding roots are mostly at the surface. It is best, therefore, annually to top-dress fruit trees. If manure cannot be had, any fresh earth from ditches or roadsides, spread a half inch or so under the trees, will have a wonderful effect. Indeed, we do not know but that for the pear tree a thin layer of road sand is one of the best of manures. We have seen apples thrive amazingly with a coating of coal ashes.

Whitewashing the stems of orchard trees has a very beneficial effect in clearing away old bark and destroying the eggs of innumerable insects. The white color is bad; throw in a little soot or some other matter to make it brown. In green-houses sulphur has been found of benefit in keeping down mildew. Possibly if mixed with the whitewash in tree dressing, it might do good against fire blight, and such like fungoid troubles.

Whatever may be said of birds and their evils when the fruit is ripe, there can be but one opinion

about their value now. They have nothing but insects to live on, and they eat them by the millions. Insects are a far greater scourge to the fruit grower than birds; it will be wise to encourage the birds. The English sparrow is now fully naturalized in this country. Great complaints of its graminivorous propensities are heard every year; but this can be better guarded against than the attacks of insects.

Many kinds of raspberries, especially in dry soils, have a tendency to throw up innumerable suckers. These should be thinned out. Three or four canes are enough to leave in a "hill." We like, however, to grow raspberries in rows, where each cane may have a chance to enjoy an independent existence of about a square foot of soil for itself.

Deep rich soil, now so generally condemned for fruit gardens, is of the first importance here. Soil cannot be too deep or too rich, if we would have good vegetables. It is indeed remarkable, that in many respects we have to go very differently to work to get good fruits, than we have to perfect vegetables. While, for instance, we have to get sunlight to give the best richness to our

fruits, our vegetables are usually best when blanched or kept from the light. So also as we keep the roots as near the surface as we can, in order to favor the woody tissue in trees, we like to let them go deep in vegetables, because this favors succulence.

It is best not to sow tender vegetables too soon, they get checked, and the last will be first. Asparagus is one of the earliest crops to set out. It was at one time believed that the varieties of this would not come true from seed, and that there was but one best kind. We are not so sure of this now. Many plant them too deep and fail; four inches is enough; rows 20 inches, and plants one foot apart, will do. Make the soil particularly rich.

Celery for the main crop will do about the end of the month, but a little may be sown now. We have never been able to make up our mind whether there is such a thing as an absolutely solid variety of celery; or whether pithiness in any degree depends on soil or culture. Certainly we buy all the most approved "solids" every year, and never yet found one satisfactory throughout. We cannot say which is the best of the many candidates.

Where new asparagus beds are to be made, now is the time; the ground should be rather moist than dry, and be trenched two feet deep, mixing in with it a good quantity of stable dung, and, if the ground be inclining to sand, add some salt; the beds should be marked out four feet wide, and the alleys about two feet. If pegs are driven down at the corners of the beds permanently, they will assist operations in future years. Having marked the positions of the beds and procured a stock of two-year-old plants, place them on the soil nine inches apart in rows one foot asunder, making three rows in each bed; then cover the whole with soil from the alleys and rich compost a couple of inches.

It has been noted that the grape-vine thrives amazingly when it gets into an asparagus bed. These are generally elevated, and are thus dry; while the rich soil necessary for asparagus is also good for grapes.

COMMUNICATIONS.

DESTRUCTION OF THRIP IN GRAPERY.

BY CULTIVATOR.

"A. H.," in the January issue, page 18, wishes to know of some efficient remedy for the destruc-

tion of thrip in his grapery. If "A. H." gets the water in his pipes to nearly boiling pitch and then paints them over with sulphur mixed with milk or water, at the same time damping paths, walls, etc., keeping the heat up in his pipes for two or three hours, he will find a complete destruction of both thrip and red spider, unless very badly affected, when a second or third application may be necessary. This operation however must not be performed until after the fruit has passed the size of ordinary peas. If the fruit has reached the coloring stage sometimes a slight sediment may be seen left upon the berry, but this will disappear without causing any injury. If "A. H.'s" house is heated by a flue great caution is necessary, as sulphur applied to any over-heated flue emits fumes fatal to vegetation.

South Virginia, Jan. 11th, 1886.

EDITORIAL NOTES.

PROLONGING THE PEAR SEASON.—A rose by any other name will smell as sweet, says the poet; but there appears to be often the same smell when it is not a rose, if what we read about the Bartlett pear in a London paper be true. This pear is known as the Williams' Bon Chretien there, and, so we are told, it is so popular that long after its season is over the dealers sell other kinds under that name, and the poor imposed-on Londoners do not know the difference. An American could hardly be fooled so easily.

THE NEVADA BLACKBERRY.—A Kansas gentleman is still pushing this as something very new, for which he expects to get a large price, and with the announcement that it is a native of the Sierra Nevada Mountains, and is wholly "owned" by him. This seems to be what was once offered as the Nevada "evergreen" blackberry, which has been shown in our pages to be the cut-leaved English blackberry, common in nurseries for the past fifty years.

There is no native blackberry in the Sierra Nevada Mountains that any one need hanker after, except a form of the Black-cap, *Rubus leucodermis*.

LIDA STRAWBERRY.—Among the latest "truly wonderful" introductions is the Lida. Judging by a cut before us made by Blanc, and therefore not likely to be exaggerated, it appears to be a good one, notwithstanding the startling epithet quoted. Usually in large-bunched strawberries we have one or two large, and all the rest small. As this

is represented, there are at least half a dozen that would be regarded as large. It is a pistillate. There seems to be a reaction in favor of pistillates by market growers who have land enough to put some pollen-bearing variety between the rows. In the old time trouble came from amateurs buying pistillate kinds, forgetting or not knowing that they had to get another kind to fertilize the first.

IMPROVED GRAPES.—It is remarkable that to this day some of the best grapes we have are among those that started the earliest in the race for improvement. The Concord is to-day indispensable everywhere, and this is true of many of the hybrids of Mr. Rogers. At a recent meeting of the Massachusetts Horticultural Society, Col. Wilder said he could not agree with Mr. Woods in regard to the value of the Rogers grapes; with him they succeed almost as well as any except the Concord and Moore's Early, but his location is a favorable one. The Lindley is superior in quality even to the Delaware. Some seasons it may mildew and others it will not, but we cannot dispense with it.

EATING FRUITS.—*Green's Fruit Grower* quotes the views of eminent medical authorities about eating fruit, and of others equally eminent about not eating it; and concludes that if we are to follow the contrary opinions of the modern "medicine man," we shall very soon bring up in a lunatic asylum.

THE BURKE PEACH.—Originated in Avoyelles Parish, Louisiana; average specimens measuring 12 inches in circumference, and selected specimens have measured up to 14 inches; and it is said to have reached to the enormous size of 18 inches around on the rich alluvial land of Bayou Rouge.

It is high flavored and a remarkable keeper. Ripe specimens have been kept eight days after being picked. The peach is roundish oblong; skin, pale creamy color and slightly shaded on the sunny side with red; flesh white, juicy, melting, sweet and vinous, adheres closely to the stone; and when fully ripe peels like the banana. Will ripen in the latter part of July in that part of the world. The size more than compensates for the lack of quantity.

SOLID CELERY.—It is still an open question whether pithy celery is to be attributed to culture, or circumstances of growth; or whether it comes from some defect in the plant from which the seed was obtained. We have given the matter much thought during many years, and incline to the belief that, as in a pithy turnip, it is wholly a

matter of cultivation, and not an inherited peculiarity with the seed; but we have no certain evidence that this is the case.

PROFITS OF MELONS IN PERSIA.—The Persians and other Asiatics are very fond of melons. It is regarded as the most profitable crop by the gardeners of Khiva. They get from 10,000 to 14,000 from an acre. They sell at about \$2.25 per 100; and the net product is generally about \$300 an acre—pretty good for a country where a little money goes a great way.

THE BERCKMANS GRAPE.—After another year, we feel that this grape will yet have a wild run in the North. It is as hardy and as free a grower as the Clinton, which was one of its parents; while the quality is very little below Delaware. Our friend Berckmans was fortunate in having so fine a fruit named in his honor. We regard it as one of the best of all the late Dr. Wylie's hybrids. It is a great misfortune that the good work a man does in pomology, not only brings him in little recompense, but even reputation does not come often till he is gone.

THE BEARING YEAR OF APPLE TREES.—As well known, many kinds of apple trees bear only in alternate years. By persistence since 1876, in picking off apple flower buds, Mr. Asa S. Curtis, of Stratford, Connecticut, induced a tree of Rhode Island Greening to bear last year, when it should have borne the year before.

PEARS IN THE WEST.—It is not uncommon to read that the pear is a very unreliable tree to plant in the West. It always seemed to us, that this representation was started by some uncomfortable Jeremiah, and, once started, has been repeated in spite of so much evidence to the contrary. At the July meeting of the Montgomery County, Ohio, Horticultural Society, Mr. Hoover spoke of a pear orchard containing ten or twelve hundred trees, that had come under his observation, and which had been planted some twenty-five years; and, although it had been greatly neglected, many of the trees were still in excellent condition.

ROT IN THE FRUIT OF THE TOMATO.—Rev. M. J. Berkely finds that the rot in the tomato is caused by the same fungus that attacks the potato tuber—*Perenospora infestans*. As with the potato, the disease is less troublesome in America than in England.

DANIEL BOONE STRAWBERRY.—Mr. Little, at one of the meetings of the Fruit Growers' Society, of Ontario, Canada, said it was so large with him that thirty berries filled a quart.

APPLE TWIG BLIGHT.—At a meeting of the Farmer's Club of Lancaster County, Nebraska, as reported by a correspondent of the *Country Gentleman*, Prof. Bessey exhibited the Bacteria obtained from a diseased apple shoot, and which, by inoculation will produce the disease again in healthy shoots.

"The question of a remedy was discussed at length. Mr. J. H. Masters, ex-president of the State Horticultural Society, gave his belief, and said: 'If a man will cut off every blighting twig as it appears, and burn them, he can soon clear his orchard of blight.' And this was the opinion of the club. Prof. Bessey said it must be borne in mind that the disease extends much farther down the twig than is shown upon the exterior, and the juice taken from a blighted twig, eight inches below the apparent limit of the disease, was shown to be swarming with bacteria. He dwelt upon the importance of using a clean knife, or the disease would be communicated to healthy wood; the knife could be cleaned by dipping it into carbolic acid."

Now, as we understand it, the germs of bacteria are omnipresent, ever ready to start into growth when circumstances favor their development. It is conceded, we believe, that when these germs are in a state of active development, and are then in the condition of virus, it will then, if actually introduced into a subject by inoculation, spread into that new subject in a manner that the inactive germ itself would not do. It will therefore seem to be good practice to wipe pruning knives as Prof. Bessey recommends. But we cannot understand what is to be gained by cutting the twigs off and burning them. If the spores are ever present, burning a few will be like bailing the ocean with a bucket. If the bacteria be in the sap that circulates through the tree, cutting off the dead parts will not help that which is left. But we are open to enlightenment by those who know.

DANA'S HOVEY PEAR.—In a letter of Mr. Charles Downing, recently published in *Green's Fruit Grower*, he says if he were planting pears for market, and found it desirable to plant Seckel, he would take Dana's Hovey instead. It is larger and richer, and has better foliage than any pear he knew. It ripened with him all through the month of December.

NEW VEGETABLES.—*Lettuce.*—The Tomhannock is said to retain its usefulness without running to seed for an unusual length of time. It has been in use from June to September.

Corn.—Cory. Raised in Rhode Island, where it has been found to come into market earlier than any other variety.

Tomato.—Turner. This is perfectly smooth, about six inches in diameter, so solid that it usually weighs 18 ounces, and, what is unusual in large varieties, is very productive.

Radish.—Earliest Carmine. An oval and yet tapering form, of a rich dark carmine color. Is fit for use in three weeks from sowing.

Melon.—Golden Perfection. This is an Italian variety; the skin is almost white and smooth, and the fruit rather small, but delicious in flavor.

Melon.—Perfection Musk. Raised in Chenango co., N. Y. Has a very thick mass of flesh, and of sweet rich flavor. It is deeply ribbed and heavily netted.

Beans.—Stringless varieties are above all desirable. Of those requiring poles, the Early Maine and the Creaseback are said to be of this character. The Best of All is a German variety that has been found an excellent dwarf in our country. The Wax Dwarf is a very profuse and early bearer.

Onion.—Mammoth. These have been raised to weigh over 5 pounds. It is reddish-brown.

Pea.—Evolution. One of Laxton's. Rather tall, over 3 feet high; said to be a continuous bearer of large crops.

Lima Beans.—King. A pod has been raised 9¼ inches long, with usually about five beans.

Cabbage.—Deep-head. A second early, with heads 10 or 12 inches in diameter.

SCRAPS AND QUERIES.

PEAR, JOSEPHINE DE MALINES.—"J. H. P.," Dayton, Ohio, Jan. 18, writes: "I send you to-day by mail a specimen of an old pear, Josephine de Malines, which I hope will reach you in good order. I have had the tree many years, but never before appreciated the fruit, though it has been a regular bearer of fair fruit. If you receive it in good order I think you will agree with me, that it is second to no pear but the Seckel. This season they have kept well as the cellar room they are in for a month past has had a steady temperature of 40° to 42°, and we will have a few until February. Please give in GARDENERS' MONTHLY, season and characteristics of 'Jones' pear spoken of in last number. I know nothing about it."

[The pear came frozen, but some we have had in the past from Ellwanger & Barry, deserved all the praise our correspondent gives it. The Jones' pear is rather smaller than this, and is in season end of Nov. and beginning of Dec. in these parts. —Ed. G. M.]

FORESTRY.

EDITORIAL NOTES.

AN EMINENT FORESTER.—We see by an English paper that "Mr. Robb, the eminent American senator, and particularly versed in all subjects connected with American Forestry, has been received with distinguished honor by the French Government, who has placed at his disposal its whole official power, to assist him in the investigations in forestry, that will no doubt prove of such vast importance to the Western Hemisphere."

Every year we hear of some one or another traveling over the earth "in the interest of American Forestry," till the whole thing has become a farce, and, we think, needs looking into. We never heard of this Mr. Robb before, distinguished Senator though he is said to be. Can any of our readers inform us where his plantations are situated, and what they consist of?

AMERICAN FORESTRY IN EUROPE.—The work of Robert Douglas and others in setting out trees, and taking the whole contract to care for them for two or three years, is attracting great attention in Europe; and some of our great foresters, who have gone over there to learn forestry, wonder that they never heard of him or his work.

THOSE HARDY COCOANUTS.—By a casual expression we judge that the recent learned editorial in a Philadelphia newspaper on planting cocoanuts along the Jersey coast, was made up by an "intelligent correspondent"—that is to say, a wise reporter in a fifth story of a printing office—from a paragraph in a London paper referring to the fruiting of the Chili Pine, or *Araucaria imbricata*. These fruits were said to be "twice the size of the ordinary cocoanut," and the "intelligent correspondent" aforesaid, who (in imagination) saw the trees along the coast, got "cocoanut" in his mind, and thus became a mixed being.

THE GREAT FORESTRY QUESTION.—Often the Editor of a magazine like ours must be tempted to cry "what is the use" and put down his pen in despair; yet time tells often that his labors have not been without result.

Years since we started to show that the so-called forest science, initiated by Marsh in his "Man and

Nature," was a complete farrago of nonsense. It is pretty well understood now that trees are a result and not a cause of climate. The hobgoblin being out of the way, there was nothing left for city foresters to worry about but the short supply of timber in the near future. Thus it became a practical question only, and trees will be planted wherever it will pay to grow them.

Necessarily, as we then had to say, there was nothing left but sentiment to care for the old forests. We cannot by all the legislation on the lawyers' shelves prevent forest fires in old forests, and the sooner these forests are gone and new ones planted the better for all of us.

These views also are prevailing, and though we personally get little credit, it is some satisfaction to feel that the work has by no means been lost. The very fact that the strange idea has become so much a part of the general thought of the world, till its parentage has been lost, is the more encouraging. *Forestry* says: "The writer who says that our hope of a timber supply does not lie in the direction of preserving the old forests, but in producing the new, comes pretty near hitting the nail on the head. Little good can come from allowing timber to stand until it has seen its best days and begins to decay and lose strength. It is not the 'primeval' but the young forest that needs protection." This is not only our idea but the exact language.

FOREST PLANTING.—Now that people are really planting forests, it becomes the more important that the system that will bring the timber into profit with the least amount of labor in the shortest time, should be clearly understood. In the report of the Forestry Congress held in Boston last year, just before us, we have an account of the 200-acre planting of Mr. Fay at Wood's Holl. He commenced to sow seed 25 or 30 years ago, and now some of the trees are "50 feet or more" in height. This would make an average of two feet a year, which seems a very extraordinary rate of growth. The forest is now "a dense body of wood, in places almost impenetrable." To our mind where there is now a dense body of wood almost impenetrable, there will soon be a dense mass of dead material easily inflammable. Notwithstanding all this has been achieved with no more labor

than sowing the seed, we should not be disposed to regard the method as the cheapest and best. Our impression is that most profitable forests will be those that will have little dead wood till the timber is fit to cut.

TIMBER CULTURE IN MINNESOTA.—Mr. F. W. Woodward, of Eau Claire, Wis., well-known to our readers as an occasional correspondent and former proprietor of the N. Y. *Horticulturist*, has a farm in Minnesota, on which he has made some valuable forestry experiments. He has already 38 acres, and will plant in the spring 5 acres more. These will be chiefly of Green ash, which he finds one of the best for that high northern latitude. White ash does fairly well, but one season when they were weakened by a summer drouth of three months, they were injured the following winter. This has been frequently noted in lower and more favorable latitudes, that a very light frost will kill a plant that has been summer weakened, though after favorable summers they might have endured the lowest temperature of that region. The White ash, cut down by the winter of 1883, made a growth of 3 to 4 feet from the ground, and proved quite hardy the winter following.

At Eau Claire, Wisconsin, which is in 44°, a high northern latitude, and the thermometer sometimes going 45° below zero, a White ash planted in the spring of 1884, is now 7 feet high, and 2 inches in diameter; a *Catalpa speciosa* planted in 1884, 7 feet high, and 2½ inches in diameter. The ends of the shoots were killed three inches, but they will shoot again and make straight stems. Norway spruce made no growth last summer, having been severely injured during the winter previous.

Gentlemen like Mr. Woodward, who plant, and intelligently watch results, are benefactors in many more aspects than in the actual forests produced. They give us actual facts to work on.

PLANTING THE RED CEDAR.—It is proposed to plant extensively the Red cedar in Bavaria. The superiority of the wood of this tree (*Juniperus Virginiana*) over all other kinds of cedar is well known.—*Garden*.

HEMLOCK SPRUCE BARK EXTRACT.—This substance, which is now much used for tanning, is obtained from the bark of the Hemlock Spruce (*Tsuga Canadensis*, Carrière = *Abies Canadensis*, Linnæus), a tree 70 to 80 feet high, found over a very extensive area in North America, extending from Nova Scotia, Hudson's Bay, and New

Brunswick, through Canada and the United States, as far south as North Carolina. The tree yields Canada pitch, used for similar purposes as Burgundy pitch in Europe. Oil of Spruce, or oil of Hemlock, is also distilled from the leaves, and used in medicine. The bark contains 14 per cent. of tannin. In the southern parts of the United States the stripping of the bark commences in the spring, and continues during April and May. In New York, Michigan, and Wisconsin, the bark is collected in June and July, and further north it is still later; that obtained furthest south is said to be of the best quality. In consequence of the demand for Hemlock bark, the forests are said to be fast disappearing. The extract, which has superseded the export of the crude bark, contains from 18 to 25 per cent. of a deep red tannin, which gives considerable weight and firmness to leather. The following is given as the mode of preparing the extract:—"The bark, in pieces ½ to 1 inch thick, and several inches long, is soaked for about 15 minutes in water at 93° Cent. (200° Fahr.); it is then fed into a hopper, which conducts it to a 3-roller machine, something like a sugar-cane mill, through which it passes. Coming out lacerated and compressed, it next falls into a vat of hot water, where it is agitated by a wheel, that the tannin from the crushed cells may be dissolved in the water; hence it is raised by a series of buckets on an endless chain, somewhat in the manner of a grain elevator, to another hopper, whence it is fed into another 3-roller mill; here it receives its final compression, and comes out in flakes or sheets like coarse paper, and almost free from tannin. The buckets are made of coarse wire that the water may drip through during the elevation. In order to avoid the blackening action of iron whenever this metal is brought into contact with the solutions, it is thickly coated with zinc. The solution is evaporated to a solid consistency generally by vacuum pans. About 2 tons of bark are represented by one bar (of less than 500 lbs.) of extract." The total production of extract is probably over 10,000 tons annually, ranging in value between £17 and £23 per ton.

No returns are available as to the quantity and value of the extract imported into Britain, as it is included under barks and extracts used by dyers and tanners. Neither is there any record of the cost of extraction; the profits, however, must be sufficient to maintain a large plant and a considerable number of hands.

From the general use of the extract, it would seem that it is applicable to most, if not to all,

kinds of leather. It also has a medicinal value, in consequence of its having similar properties and effects to extract of Rhatany (*Krameria triandra*), and consequently applicable as a medicine where that drug is applied—*John R. Jackson, Museum, Kew, in Gardeners' Chronicle.*

PRACTICAL AMERICAN FORESTRY.—If the planting of new forests go on as rapidly as it has gone in

Kansas, there will soon be no occasion for weeping over the destruction of the old "tinder-box" forests that nature gave us. The assistance of the government of Kansas appears to have been very successful in the aid of forestry, over 20,000,000 forest trees being under successful culture, and there are about 150,000 acres of artificially planted forest trees.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

NOTES ON THE FLORA OF THE SANDWICH ISLANDS.

BY W. D. BRACKENRIDGE.

NO. I.

In looking over a journal kept by me, during a visit to the Sandwich Islands, some forty-five years ago, I find several showy and otherwise interesting plants noted, which are to my mind well worthy of being introduced to our country. As communication with these Islands is frequent and easy—by way of San Francisco—the possibility of an intelligent collector securing them would not prove very difficult; and in order to make it less so, I will designate the localities, as near as I can, where the most desirable plants are to be found.

The Islands comprising this group, are seven in number—with a few detached clumps of small size—the whole being of volcanic origin, mountainous and rugged in outline. Owing to trade winds prevailing the lee sides present a somewhat grayish tint, and in many districts are almost destitute of vegetation; while the tops of the secondary ranges of mountains, and the weather sides are clothed with a luxuriant forest vegetation. Again, the mountains Mouna Roa, and Mouna Kea, on the Island of Hawaii—the first is 13,463 feet high, Mouna Kea 13,656 feet,—are both destitute of vegetation within 2,000 to 3,000 feet of their summits. Even animal life can not long exist there. With these preliminary remarks, I shall now notice some few of the most remarkable plants which we met with.

The first and most interesting is a set of four

species of shrubby Geraniums. One of these, *G. cuneatum*, (*Hook.*) detected by Menzies in Vancouver's Voyage, is a shrub 2 to 3 feet high, bushy, branches terminated with wedge shaped leaves 1 to 1½ inches long, 3 to 4-toothed at the apex, silvery white pubescent on the upper side—often on both sides, but sometimes glabrous; flowers white, showing to advantage over the leaves of the green variety. Found in great abundance in open places, at an elevation of 4,000 to 6,000 feet on the Islands of Maui and Hawaii, near the great Crater of Kilauea.

2d. *G. multiflorum* (*Gray*).—A much branched shrub, 2 to 4 feet high, with slightly pubescent roundish, obovate bluntly-toothed leaves about 1½ inches long; flowers profuse, of a pale purplish color. Growing on dry hills, district of Waimea, Hawaii.

3d. *G. ovalifolium* (*Gray*).—Shrub, 3 to 5 feet high, leaves ovate, coriaceous, sharply serrate, the surface presenting a chalky appearance, when found in exposed places; flowers large, white with purplish veins. Hab.: Crater of Haleakala, East Maui, at an elevation of 8,000 feet.

4th. *G. arboreum* (*Gray*).—A large shrub or small tree, 6 to 14 feet high. Much branched, leaves membranaceous, slightly pubescent, oval and sharply serrate, peduncles bearing 2 to 3 reddish-purple flowers which are very attractive. I have seen plants of this so large that three or four men could have hid behind it. The stems are sometimes 3 to 4 inches in diameter. We brought a truncheon of this home to the United States. Hab.: Mountains East Maui, at an elevation of about 6,000 feet, in open exposed situations.

Pittosporum confertiflorum (*Gray*).—A low, bushy tree, 20 to 25 feet high, leaves of a coria-

ceous texture, ovate-oblong, crossed on the branchlets, smooth on the upper side, tomentose on the other, with a fulvus wool. Flowers of a creamy white, numerous in umbels, 3 to 4 inches broad, very odoriferous. Of the twelve to fifteen species of *Pittosporums* with which we are acquainted, this bears the palm on account of its fine habit, large, beautiful and fragrant flowers; and then, it is found at such an altitude as to warrant its proving hardy in our middle Atlantic and Southern States. Farther North it is well worthy of a place in our conservatories. Found in great abundance on the margin of forests on East Maui, at an elevation of 6,000 feet.

Broussaisia arguta (Gaud.).—This is a large shrub, 4 to 6 feet high, much branched, with opposite ovate-oblong leaves 4 to 6 inches in length, smooth on the upper and strigose-hirsute on the under surface. Inflorescence terminal, composed of a broad compound cyme, somewhat resembling that of *Hydrangea hortensis*, to which it is closely related. A common and very ornamental plant found on the lower range of mountains behind Honolulu, also on the Island of Hawaii.

Gunnera petaloides (Gaud.).—This imposing plant is rather rare, and only to be found on elevated moist rocks, in situations almost inaccessible. It is strictly herbaceous, with round kidney-shaped leaves 2 to 3 feet in diameter. Its general appearance is that of a plant of *Victoria* *Rhubarb*. Flower spikes 3 to 5 feet high, with crowded branchlets and insignificant flowers. Found on West Maui, Kauai and Oahu.

Agati tomentosa (Nuttall).—An elegant and profuse scarlet pea-flowering plant, bearing a remarkable strong resemblance to the *A. grandiflora* of Desvieux, which we saw growing in the garden of a missionary on Oahu; only our plant has a more prostrate habit, extending on the ground 30 to 40 feet from the stock, and in having the underside of the leaves more tomentose. The flowers are also smaller in the wild state. We found also, a yellow-flowered variety. Both varieties are well worthy of the cultivator's notice. Found on lava plains east of the crater of Lua Pele, Hawaii.

Canavalia galeata (Gaud.).—Here we have another Pea flowering plant, having a habit very much like that of *Kennedy* *rubicunda*, but a much stronger grower. Grows among bushes near the coast on the Island of Oahu.

Metrosideros polymorpha (Gaud.).—A tree or broad branching bush with scarlet flowers and entire leaves, varying from subrotund and pubescent to oblong-lanceolate and smooth on both sides.

Dr. Gray describes six distinct forms of this, and to these he might very properly have added his *M. lutea* and *M. rugosa*, as well as *M. macropus* of Hook. and Arn. Of this plant we could have collected many more forms, for all over these islands, wherever you turn, specimens present themselves, varying in form and consistency of the leaves from anything you have met with before, causing one almost to arrive at the conclusion that there is no such thing as species in nature; and were it necessary we could cite many instances similar to the above in other tribes of plants to bear us out. Taking the two extreme forms of this plant they would apparently form to a closet botanist, two very good species, while the intermediate forms would again afford excellent material for the species maker. There is a form with yellow flowers found by me near Hilo Bay, Hawaii; this is Dr. Gray's *M. lutea*; the natives call it Ohea.

Lobelias.—Of these there are not less than twenty kinds. Most of them are suffruticose and erect in growth; some bearing long white or yellow flowers. The majority have long narrow entire leaves. One kind we detected on the mountains of Kauai had a simple stem 12 to 15 feet high, terminated by a spike of lilac-colored flowers. But by far the most interesting kinds met with were on the mountains behind Honolulu, Oahu, at an elevation of about 2500 feet.

Plantago Quelenianum (Gaud.).—A shrub from 1 to 6 feet high, with woody stems and branches bearing broad seven-ribbed leaves in tufts, the long flower spikes arising from below the leaves. This plant is more singular than pretty. Found on West Maui at an elevation of 6000 feet, also behind Honolulu.

One of the most interesting plants of this group is the *Argyroxiphium* *Douglasii*, (*Hooker*) belonging to the natural order of *Compositae*, the arrangement of whose leaves resembles very much that of *Bonaparte* *Yucca*, only more compact and very persistent, clothed with a white silky down which glistens in the sun. This is only to be met with on elevated and dry situations on Mauna Kea, as high as 10,000 to 12,000 feet, where we have met with it in such quantities that when viewed at a distance resembled very much a flock of sheep with their lambs. About the same elevation, but usually a little lower, we find that yellow flowering tree, *Edwardsia chrysophylla*, (*Salisbury*) which attains a height of 20 to 30 feet; its stem a diameter of 8 to 10 inches; altogether this resembles very much the *E. grandiflora* of New Zealand,

but would, I think, be more hardy. Native name, Mamani.

There are many other notable plants to be found there, as an *Exocarpus*, very much resembling the *E. cupressiformis* of Australia. This produces "the cherry with the stone on the outside," as the Australians say, and which they reduce to a conserve.

On the island of Hawaii there is a species of *Cyathodes*, nearly related to a New Holland *Eparis*; very desirable. And in open glades grows the *Osteomelis anthyllidifolia*, a spreading bush nearly related to *Mespilus*, bearing clusters of white astringent berries; also a *Freycinetia*, a twin brother of *Pandanus*, only having a rambling habit, forming almost impassable thickets on high mountain ridges behind Honolulu, ascending to the tops of trees on the other islands; the surrounding flowers are of a pale orange color. A very ornamental plant.

Acacia Koa (Gray). This is one of the most common forest trees of these islands, rising to the height of 50 to 100 feet, with a trunk as much as 5 feet in diameter, affording excellent timber for cabinet work. The leaves are only pinnate in the young plant; in the adults the footstalks become dilated into what is termed *Phyllodia*, and in this respect resembles many New Holland species. And just let me here remark in passing, that to my mind, there exists a strong affinity between certain plants of these islands with those of Southern Australia; as witness the above entire-leaved *Acacia*, the *Exocarpus*, *Edwardsia*, *Metrosideros* and *Cyathodes*. Nor is this similitude less evident in the Fern tribe, for we have here the arborescent *Cibotium*, representing *Dicksonias* of a similar habit and structure; while the *Pelargonium*s of Southern Africa have their counterpart in the shrubby *Geranium*s of these islands.

It is something remarkable, that no epiphytic orchids have been found on the islands; and of terrestrial kinds only three very obscure sorts were observed; one having the habit of a *Liparis*, another, that of *Malaxis*.

The only food-producing plant, truly indigenous to these islands is, the *Tacca pinnatifida*, found in great abundance. From the tubers is manufactured a kind of flour, said to equal the West Indian Arrow-root, most of which is exported. The staple food of the natives, consisting principally of Taro (*Caladium esculentum*), sweet potatoes and bananas. Bread fruit did not appear to be relished by them, as it is by natives of other groups of islands in the South seas. *Govanstown, Md.*

THE UPAS TREE.

BY REV. L. J. TEMPLIN.

Among all the deadly poisons of nature, that of the Upas stands pre-eminent for its terrible virulence. Much of fiction has gathered around this subject, and wonderful stories have been told concerning this tree. About 1775, a Dutch surgeon, Fœrsch, who had traveled extensively in Java, published an account of the Upas poison valley. According to this author, such were the deadly exhalations from the Upas tree, that no living thing could exist nearer than fifteen miles of the tree. That the whole country within a radius of this distance of the locality where the trees grew, was a lifeless, barren waste, strewn with the bones of animals, birds and human beings that had inadvertently ventured within the deadly influence. The poison was obtained, we are told, in the following manner: Criminals, condemned to death, were given a chance for life and freedom, on condition of their procuring some of the Upas poison. An old priest lived on the confines of the "valley of death," whose duty it was to prepare the Upas hunters for their duties, and administer the consolations of religion to them before they started on their perilous journey. Here they rested till a favorable wind blew towards the tree, when, furnished with a leathern mask or cowl, and a box to contain the poison, they set out on their dangerous mission. If a man possessed a robust constitution and vigorous health, he might return in safety; otherwise not. The priest stated, that in the thirty years he had officiated, only about one in ten who had gone forth on this errand, had returned alive. Nearly all of this has been proven to be pure fiction. No such poisonous exhalations taint the air for miles around, though the deadly character of the juice of the tree has not been, and cannot be, exaggerated.

According to Thunberg, the famous Swedish botanist, "the Upas tree, an evergreen, is easily recognized at a great distance. The ground around it is sterile, and looks as if it had been burned. The sap is of a dark brown color, and becomes liquid by heat, like other resins. Those who gather it, have to employ the greatest care; covering the head, the hands, the whole body, to protect themselves from the poisonous emanations of the tree, and especially from the drops which fall from it. They avoid even approaching too near, and they provide themselves with bamboos tipped with steel heads, having a groove in the middle. A score of these long spears are stuck into the tree, the sap runs down the grooves into

the hollow bamboo, until it is stopped by the first joint of the wood. The spears are left sticking in the trunk for three or four hours, so that the sap may fill up the space prepared for it, and have time to harden, after which they are drawn out. The part of the bamboo which contains the poison is then broken off, and covered up with great care."

Again, this author says: "Persons passing beneath the branches bare-headed lose their hair. A single drop falling on the skin produces inflammation. Birds can with difficulty fly over the tree, and if they by any chance alight on its branches, they fall dead. The soil around is perfectly sterile to the distance of a stone's throw." This poison is used to put on the arrow points, and also in the execution of criminals. When the point of a lance that has been dipped in this poison pierces the skin the individual is "instantly seized with violent trembling, then with convulsions," followed by death in a few minutes. The Upas is found in different parts of the East Indies, in Java, Borneo, Sumatra and in the Celebes. The leaves are figured in many books as those of *Antiaris toxicaria*. Rumph describes it under the name *Arbor toxicaria*. The tree grows with a rather thick trunk 60 to 80 feet high with extended spreading branches. The bark is rough and knotty and of a brown color. The wood, which is hard, has a pale yellow color, and is marked with black spots. This tree belongs to the same family with *Strychnos Tienté*, *S. nux vomica*, *S. Ignatii*, *S. Colubrina*, from which the alkaloid strychnine is obtained. These two poisons—strychnine and the Upas poison—are the most virulent of all poisons known. From the *S. tienté* is obtained the Rajah Upas, or poison of princes. This is a climbing plant that rises spirally around the colossal trunks of trees, and over-tops them at a hundred feet from the ground where they spread their large, green, glossy leaves and hang their fragrant clusters of white flowers in the air and sun light. It is only in the root of this plant that the deadly strychnine, the only active principle it contains, is found, while that above ground is harmless; even the sap containing no dangerous properties.

Canon City, Col.

[Our correspondent is mistaken in classing the *Antiaris* with the same family as *Strychnos*. The last is an apocynaceous plant—the same family as the common *Periwinkle*, and *Oleander*. Some of these are very poisonous.

The *Antiaris* or Upas belongs to the same family to which belongs the Mulberry and Osage orange

— *Urticacæ* — and few of these are noxious. The Editor of this once had a plant of the Upas tree under his charge for a year. It was between 3 and 4 feet high, and growing in a 12-inch pot. He had to handle and care for it the same as other plants. His "skull and cross bones" are still in their proper places, nor does he know that he was ever in the slightest danger of having them misplaced by reason of any deadly emanations proceeding from the plant.—Ed. G. M.]

EDITORIAL NOTES.

IMMEDIATE INFLUENCE OF POLLEN ON FERTILIZATION.—Prof. Burrill took the Crescent strawberry, which is almost a pistillate. Along side were placed some Sharpless, and some of a wild variety with small dark-colored fruit and deep sunken seeds, as different as one could imagine from the Sharpless. These two very different kinds were used in this way to fertilize the Crescent.

When the fruit was ripe, a box of Crescents from near the Sharpless, and a box of Crescents from near the wild ones, were placed before several persons, without any one being able to detect the slightest difference between one box and the other.

This is one of the best tests we have heard of, unless there should have happened enough pollen on the Crescents to fertilize themselves.

WINTER IN PHILADELPHIA.—Philadelphia may soon be classed among the tropical regions of America; when even Florida and Louisiana had 16° to 18° below freezing point, Philadelphia was little lower; and at the worst during the recent blizzard, the glass marked 6 below zero only for a few hours. The steady temperature was about from 4° to 10° above zero. The first week in February, it was for several days about zero, but vegetation does not seem to have suffered much.

PINUS SCOPULORUM.—Mr. Douglas writes that he has experimented very carefully with the Rocky Mountain variety of the *Pinus ponderosa*, and finds it no more free from the leaf rust under culture, than its relative from the Pacific coast. He has seen the same, or a similar fungus, on the wild trees in the Black Hills of Dakota.

KILLING PERNICIOUS WEEDS.—We have always contended that the alarm so often felt about the introduction of noxious weeds, and which often

shows itself in the enactment of ridiculous laws by Legislatures against them, is wholly needless. A plant cannot possibly live over one season, if we do not permit the leaves to mature, and a crop of corn, with the clean culture that such a crop ought to have, will destroy the most persistently inclined. We have noted that the worst possible weed—the Horse nettle, *Solanum Caroliniensis*—has been utterly routed by this method. But it does good to keep people in mind of these things.

We note in a recent issue of the *Country Gentleman*, that "Mr. Nicol found nothing simpler and easier for the destruction of couch than the cultivation of corn, thoroughly performed. He had a field treated in the following manner with perfect success: The ground was first manured and plowed in autumn, as if there was no such thing as couch, using sharp coulter. In the spring it was cross-plowed and dragged till the first of June, when the corn was planted in hills. It was cultivated both ways once a week, and the couch kept under by hoeing, with thorough tillage till the corn fully occupied the ground. "We have seen a twelve-acre field, which was densely filled with couch, entirely cleared of it by plowing or cultivating once a week the season through, keeping the weeds constantly smothered so that they could not breathe. But by whatever way the work is undertaken, it will certainly fail if done in an imperfect manner, and not completely and thoroughly, and this is the reason that so many complain that they could never succeed."

COMFORT FOR FLORIDA.—A correspondent of a Philadelphia newspaper writes that the people of Florida are many of them rejoicing over the freezing of their orange trees, because it will destroy so many insects. This sounds like whistling through a ghost-haunted graveyard.

ACCELERATING POWER OF HEAT IN THE APPEARANCE OF INSECTS.—Professors Riley and Lester Ward have a difference of opinion, as to the appearance of a seventeen-year locust so late as October last. Dr. Ward did not see the insect, but believes he heard the song. Prof. Riley believes that sometimes a few will appear a year in advance of the main army, or may rest till a year after; but that the appearance in these years will be at the same season that the main brood appears, and never as late as October. We supposed it was conceded that creatures of this class could appear whenever there was warmth enough to accelerate, or lack of warmth to retard, no matter what the season of the year.

Once the writer had two greenhouses, running parallel, about 16 feet apart, and with banks of earth against the wall to help keep out frost. Just before winter this space was enclosed by glass, and turned into a warm propagating house. That winter, numerous "lightning bugs" were in the house, hatched out months before their regular season, presumably from larvæ in the earth banks, and by the artificial winter warmth. Mentioning the fact to an entomologist at the time, it was not regarded as anything remarkable.

SCRAPS AND QUERIES.

LOCALITY FOR THE GINSENG.—"M. D.," says: "Your correspondent, 'H. H.' will find *Aralia* (*panax*) *quinquefolia* under the forest trees on the well-known Goat Island at Niagara Falls. I saw quite a number of specimens of the plant whilst visiting there about the first of August, last year. It is to be hoped that Goat Island's new owner will allow these and all other wild things to remain, including of course the erect and fallen trees and shrubs as well as the herbaceous stuff that belongs beneath them. I may as well mention that another *Aralia*, the species *nudicaulis*—wild sarsaparilla—is very abundant in the woods about Rochester, N. Y., and near it, in one particular forest, I remember, the diminutive and pretty *Onagræaceous* plant, *Circæa alpina*, which I believe is not to be met with near Philadelphia."

THE YELLOW ZEPHYRANTHUS.—"J. H. S.," New Haven, Conn., writes: "I have a yellow *Zephyranthus*, called *Z. ochroleuca*; has glaucous leaves about 10 inches in length, and as wide again as the leaves of *Z. Treatiæ*; bulbs also larger than the last named. This probably is the variety, 'G. R.,' Beverly, N. J., wants to get the name of."

[The correct name of this is *Amaryllis chloroleuca*, a native of the Cape of Good Hope, and though we have never seen the flower, supposed it was greenish white and not yellow. Is it very yellow?—Ed. G. M.]

COCCULUS CAROLINIANUS.—A botanical friend kindly calls our attention to a slip of the pen in the editorial note under Mrs. Thomson's article on page 36. The word should of course have been *dioecious*, not *monœcious*, when describing a plant having separate sexes on different ones.

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

THE SACRED LILY OF THE CHINESE.

BY MRS. FANNY E. BRIGGS.

Quite frequently I notice items in Eastern papers and magazines concerning "The Sacred Lily of the Chinese," some of them making quite a mystery of it. One says "it is something like a Narcissus," another gives its name as "Suey Sun," which it translates as "Water Angel plant," and says it is found native in running streams.

I have seen many of these plants in all stages of growth; and all obtained directly from Chinamen, were a strong growing, large-flowered, pure white variety of *Polyanthus Narcissus*. The dry bulbs may be obtained at almost all Chinese shops, and Chinamen make presents of them to their customers.

During a recent visit to Oregon I was so fortunate as to find favor in the eyes of Doc Lee, and received from him a fine large bulb with numerous off-shoots, together with the following directions: "Put him in watee, in dishee, put plenty locks (rocks) around him, him glow heap." I had not then noticed the "water-angel" item, or I should have questioned Doc as to the native habits of the plant, but this is the usual mode of culture; but as the bulbs will not bloom again after this treatment, I have put mine in earth, and may report the result. The bulbs are globular, and very large, some nearly 3 inches in diameter.

EDITORIAL NOTES.

GABRIEL'S TRUMPET.—This is the common name of the *Datura arborea*, a well-known plant, allied to the *Stramonium*, and popular on account of its sweet white flowers. The flowers are truly trumpet-shaped in some certain sense, but if the one in the hands of the statue that ornaments the entrance to some cemeteries, is an exact representation of the one owned by the original of the statue, we can scarcely trace a great resemblance.

EARLY WINE MAKING IN AMERICA.—At the meeting of the American Philosophical Society in Philadelphia, July 19, 1768, it was resolved that

the "Society would be obliged to any gentleman that would communicate to them any method of making wine of the American grape, without sugar or water, or the best way of making it with that addition;" and at the meeting of September 20th "a specimen was exhibited by Dr. Syng of wine made of the small black American grape, without water or sugar, in 1765, which appears to be perfectly sound and delicious to the taste," as the minutes of the Society of that date record. This was no doubt the *Vitis cordifolia*, the species that has given us the Clinton, so that this species may be regarded as among the earliest to give a good American wine.

A POTATO CENTENNIAL.—Monsieur Eugene de Duren, in the *Revue de l'Horticulture Belge*, thinks that Europe ought to institute a potato centennial, as well as America have its centennial to commemorate the introduction of cotton. No more precious conquest for humanity was ever obtained over nature, he thinks, than that which planted the potato on European soil, and it was a conquest over human prejudice. Parmentier utterly failed to overcome the obstinacy of his French fellow-citizens against using the root, till it obtained the patronage of royalty. On the 25th of August, 1785, Parmentier offered King Louis XVI during a grand festival at the Tuileries a bunch of potato blossoms. The king placed some of the flowers in his buttonhole, and then ate some of the potatoes in the presence of all the court. Everybody ate them after the tubers had received this kingly blessing, and their culture rapidly spread through Europe. Mr. de Duren would therefore fix this day for the date of the centennial year.

It was of course known before this. They were known to have been planted in Belgium by Philippe de Sivry in the sixteenth century, from some tubers in 1587, sent from Italy by the Pope's Legate, from roots introduced by John Carden from Peru in 1580. The English seem to have had their first roots through Sir Francis Drake, and Ireland received its plants through John Hawkins "on his return from Santa Fe" and by Richard Greenville from Virginia. It was 1580 when Sir Francis Drake landed in Plymouth, so that some-

where about that time will fix its introduction into England, 1580, the same year the English had them from Virginia. John Hawkins brought his in 1565, and Greenville in 1586.

Charles Lecluse—the Clusius of Botany—wrote in 1588, after receiving two tubers from Philip de Sivry from Belgium, "We eat them in Italy with pork in same way we do turnips," and, "it is very common on account of its fecundity in many German gardens." This note with a figure of the plant is the first mention in history. For all this the culture as an article of food does not seem to have made much general headway till a society of gardeners at Bruges, known as the confraternity of Saint Dorothy, took it in hand and made a free distribution everywhere of the tubers. This was in 1740. Dr. de Duren mentions also the names of Van Sterbeck, and Antoine Verlinest, as others to be everlastingly commemorated with those we have already named, in any honors to be given to the early introducers of the potato to Europe.

THE HOLLY.—The London *Gardener's Chronicle* has the following notes on the Holly, to which we add a few notes of the American species:

"The common name Holly, or Holme, is derived from the Anglo-Saxon Holign, or, as some writers assert, from the old Norse Hulfr. It has also been called Holy tree, in consequence of its use at this time of the year—a name easily corrupted from Holly. The use of Holly is said to have been 'derived from the Romans, who were in the habit of sending boughs to their friends during the festival of the Saturnalia, which occurred about the same period; and the Oaks being then bare of leaves, the priests obliged the people to bring in boughs of Holly and evergreens.'

"The practice of decorating houses with Holly seems to have been introduced by the early Roman Christians, and this practice became, in course of time, connected with the Christian faith. The prickly character of the Holly leaf is suggestive of its reputed power in driving away evil spirits, and in many parts of the Continent Holly branches are cut on Christmas Eve and hung up in houses and stables for this purpose. The prickles of the foliage, the blood red color of the berries, and the word "holy," from Holly, are all suggestive of Christian associations, and consequently opposed to the witches or evil spirits.

In Germany the Holly is known as Christdorn, as it is supposed to have formed part of the crown of thorns used at the crucifixion of our blessed Lord. Many curious superstitions are connected with the Holly, both in this country and on the Continent, and it is valued according to the abundance or scarcity of the fruit or berries. The present season is an exceptional one for its very large crop, many of the finest trees, and even the clipped hedges in the Royal Gardens, Kew, being thickly studded, and in some cases, laden with

dense clusters of bright scarlet berries. The Holly, besides being found in copses and woods in this country, is found also in other parts of Europe, from Southern Norway to Turkey and the Caucasus, and also in Western Asia."

The American Holly is named *Ilex opaca*, from the opaque or dull color of its leaves, in contrast with the bright shining green of the European species. The berries are also of a duller red. Like the European species, it is polygamous, some trees bearing no berries, and all varying with the season in fertility. In Philadelphia, it is extensively used in Christmas decorations; but the absence of berries is easily supplied by working in those of the deciduous Holly, *Ilex verticillata*, which is very abundant in the vicinity. The effect is just the same as if the evergreen Holly had borne berries of its own.

PLANT COLLECTING IN THE TROPICS.—Mr. Joseph Woodford recently gave the Massachusetts Historical Society some account of his experience as a plant collector in Honduras. One of the difficulties was in getting native assistance. He says:

"These countries, however, labor under serious disadvantages. The inhabitants have no incentive to labor for more than will produce their daily bread, as there is no enterprise into which they can put any surplus they may receive, and consequently they are lazy, unambitious and careless, and but small areas of land are cleared for cultivation. These small farms, when once subdued and planted, yield crops all the year round, so that the husbandman can continually gather food for the subsistence of his family. When Mr. Woodford was there, oranges were worth fifty cents per hundred, bananas fifty cents per bunch, cocoanuts ten dollars per thousand, and lemons, limes, pineapples, etc., were equally cheap. As these fruits are continually maturing, a ship can be loaded with them at any time along the coast. New Orleans, being only five days distance by steamship, is the most available large market for perishable fruit. The country offers an abundant field for an enterprising population. Well-directed labor continuously applied is sure to meet with a bountiful return in the natural productions of the country. Yet it remains the lazy man's paradise, and probably will until the enthusiasm of the live Yankee fills the land with homes such as we have in New England."

WOOD LAUREL AND MOUNTAIN LAUREL.—Mrs. Amanda B. Harris has recently published some very readable and instructive papers of a literary character on "Wild Flowers." She says *Kalmia latifolia* is the Mountain laurel and is only to be found in mountain regions. She has evidently been misled by a misapplication of the name. Mountain laurel is usually confined to the Rhodo-

dendron which does generally grow in mountain regions. *Kalmia* is "Wood laurel," and grows at low as well as greater altitudes.

INCIDENTAL ADVANTAGES.—What one may do has often advantages never foreseen. A miner, for instance, goes into a dry and arid country, wholly unfit for horticulture, and what he needs to support him has to be brought hundreds of miles; yet when he has done all he can and deserts the place because it produces nothing, that which he has done enables thousands to live on it after he has been obliged to leave it. Thus the early miners in California had to leave after the precious metals were exhausted, but the ditches they dug were what the farmer wanted.

Many of these ditches which were constructed at enormous cost in the heyday of placer mining, now that the placers are all worked out, constitute a perennial source of increase and wealth to the husbandman, who has succeeded to the miner and come to stay.

One of these ditches, called the Bear River Ditch, is 70 miles in length, and cost 2,500,000 dollars to build, in the year 1851; it carries about 3,000 miners' inches of water, or about 45 cubic feet per second. It was constructed to bring the water of the Bear river down to the rich placer mines of Placer county, and was used for mining exclusively, but not now at all. Running, as it does, through the fertile foot-hills of that county, it is a permanent guarantee of fruitfulness to the vineyards and farms which are being planted at either hand, on lands which lie below the level of the ditch.

BERGAMOT PEARS.—The *London Times* says: "Among fruit fanciers several incline to derive the name of this favorite species of pear from the Italian town of Bergamo, while a larger number prefer Pergamos, laying stress on the fact that this species was first introduced into Europe by the Crusaders, which is no doubt the reason why in some parts of Southern Europe they are still known by the name of Syrian pears. But the geographer Ritter more than thirty years ago pointed out what seems to be a more probable derivation. A fine and late ripening pear is much cultivated in the neighborhood of Angora, and on account of its lateness in maturing used formerly to be in great favor at Constantinople. It was known as Beg-Armud, or the 'prince pear,' and the Crusaders, who traversed all Asia Minor, brought back with them the name and the fruit."

CORRECT REPORTS.—Every one who has any-

thing to do with public life, and is liable to have what he says or does reported in the public papers, must have but little confidence in the "truths of history." He will be apt to think that great man who recommended his son to read novels rather than history, because "we know they are not true, while we do not know how much truth there is in history," was nearly right. It is amazing to the Editor of this magazine to find himself often quoted as authority for all sorts of absurdities. But this seems the lot of all. Only recently we noted in an English paper a speech by Sir Theodore Martin at Denbigh, warning those who would see England a Republic that they were making a grand mistake: "I had once an interview," said he, "with General Grant, who said to me, 'Nothing amazed me more in England than that there should be people tampering with the institutions of England. We would give our ears to have such institutions in America.' And this remark was made to me by one who had been President of America."

The absurdity of making General Grant wish we would "give our ears" to have a monarchy here, is too absurd for any refutation; and when we find a man with so little understanding as to speak of a President of the United States as "the President of America," we can readily understand how such a mind should have wholly misapprehended what General Grant said. But for all this there is no doubt but "Sir Theodore Martin's" reminiscences of General Grant will get into some history as veritable truth. So we smaller folks ought not to complain when our views get distorted.

SWINDLERS.—A very common dodge with swindlers of the horticultural persuasion is to open an account with some well-known firm, and pay promptly and well. Then they order of other firms, and "refer to Messrs. So-and-so." A letter is written and the reply comes, "He has always dealt honorably with us." The goods go, and it is ultimately found to be a mere dodge. We know of one swindler who got thousands of dollars worth from numerous nurserymen because he promptly paid a few hundred dollars to a well-known New York firm.

COVENT GARDEN MARKET.—This famous place of which all the world has heard, and so many seen, and which rules the price of vegetables, fruit and floral products over so large a part of Europe, was part of a monastery, the convent garden, and was given to the Earl of Bedford by

Henry VIII. Charles I. gave a charter to the then Earl of Bedford to hold a market in the Covent garden fields. In 1810 Parliament granted further privileges, which established the market as it is now. In 1828 the Duke of Bedford put up the buildings as they now exist. Tolls are collected on everything that comes to the market, and thus an enormous income accrues to the Duke.

LIVE SEEDS.—Last year a number of seedsmen advertised that they sold "reliable" seeds; another has gone further and advertises "live" seeds. We do not know whether this is patented.

ORIGIN OF THE HELIOTROPE.—Some very funny stories go the rounds of the papers sometimes, one of which is the following in relation to the Heliotrope. It reads as if it might have originated in the fertile brain of Brett Harte:

"One day this botanist, Jussieu, was herborizing on the Cordilleries, when he suddenly found himself inebriated by the most delicious perfume. He looked around expecting to discover some splendid flower, but perceived nothing but some pretty clumps of a gentle green, from the bottom of which little capsules of a faded blue color were detaching themselves. He observed that the flowers turned toward the sun, and he therefore gave it the name of Heliotrope. Charmed with his acquisition, he collected some of the seeds, and sent them to the Jardin du Roi. The French ladies were charmed with it, and made of it a floral pet. They placed it in costly vases and christened it the flower of love. From thence it soon spread to other parts of the world, and has everywhere been greatly admired. One day, a very charming woman, who doted passionately on the Heliotrope, was asked what she could see in this dull and somber looking plant to justify so much admiration. 'Because,' she replied, 'the Heliotrope's perfume is to my parterre what the soul is to beauty, refinement to love, and love to youth.'"

Only an inebriated botanist could have seen any more turning to the sun in the flower of the common Heliotrope than in any other flower, but whether Jussieu was ever inebriated or not, he had no chance to give this a new name, for it belongs to a family that has had Heliotrope connected with it from the earliest times. Heliotropium was the name given to a Grecian plant of antiquity, not because it actually turned to the sun in the sense taken in the paragraph quoted, but in connection with the Ovidian story of Clyte and Phœbus. The sun (Phœbus) tried to get the love of Clyte but failed. He tried and tried, but still Clyte did not return his love. Phœbus then turned his affections elsewhere, when Clyte, as in many cases of true love to this

day, discovered that she really did love Phœbus. She did not reclaim the god however, and she died of a broken heart. The gods, in pity, turned the unfortunate girl into a flower—the Heliotropium. But this plant is applicable to the story only in this way. It grows in Greece only on dry, open spots, on which the sun (Phœbus) loves to shine. But not the constant wooing of the sun god brings the plant into flower till midsummer—the summer solstice—when the summer sun turns to go down hill again. After midsummer the plant flowers, but the sun which has wooed in vain has now turned away, and the blossoms may be supposed to be looking regretfully after. This is all the story—no turning with the sun in its diurnal course—but in an allegorical sense with its annual one. The same ignorance of the true story of the Heliotrope has led to the association of the common sun-flower, Helianthus, with it, and many to fancy that it "turns with the sun" also. But that name comes from the resemblance of the flowers to old-fashioned pictures of the sun.

The "charming woman" story is also wonderful. The interlocutor must have been "dull and somber," or had a severe cold in the head, not to have perceived that the fragrance gave it a charm quite as much as any relation of beauty to the soul.

It may be of interest as showing the difference perhaps between English and French ladies that while the latter have dedicated the flower "to love," the former associate it with "cherry pie," which is the common name of the plant in Queen Victoria's possessions. The common name with the Peruvians is "Vanilla;" whether borrowed from the orchid bean of that name, or whether the Vanilla bean is so called from the resemblance of the perfume to that of the Heliotrope, we do not know.

NEW YORK EXPERIMENTAL STATION.—Report of the Botanist to the New York Experimental Station, January, 1886.

Nothing is more important to the horticulturist than the ascertaining of exact facts. Most of our horticultural reports are filled with discussions on which one speaker "believes" this, and another speaker "believes" that—often beliefs of as contradictory character as ever appeared in the ecclesiastical or political world. All these expressions of belief have a value in proportion to the faith the public may have in the good judgment of the speaker.

But how much better is it to have worked out

for us exact facts? Then each observer may form his own belief. It is such considerations as these that give value to work such as this in which Prof. Arthur is engaged. We have in this report, minute details of his work in tracing the phenomena attending fire blight, spotting in quince fruit, rotting of tomatoes, rust and mildew in lettuce, rotting of cherries and plums, disease in clover leaf, and the fungus parasites on various weeds.

The article on the cherry and plum rot is particularly interesting, from a prevalent belief that rot only follows the puncture of the plum weevil. That it does follow the puncture of the weevil is very well known, and indeed, if rot did not follow the puncture, the mere deposition of the egg would not be so serious a matter. It is from the well-known fact that rot does follow the puncture of the curculio, that the belief prevails that it is the only cause of rot. The fungus is, of course, the cause of rot, even when punctured; because the injured tissue would naturally be the food of such fungi as feed on organic matter having a low vital power. But this is not what is meant when we say fungi is the "cause" of disease. When therefore, Prof. Arthur says the loss of cherries and plums from rot before gathered, is "almost wholly due to the attack" of *Oidium fructigenum*, we fear that those who held to the theory of the curculio as the exclusive cause of rot, will hardly be satisfied.

However, Prof. Arthur shows here that spores, placed on cherries free (we infer) from curculio marks, cause rot in the fruit. This is the great positive gain to horticultural science by the Professor's careful and admirable work.

SUZL FOSTER.—We learn from the *Country Gentleman*, that this enthusiastic western horticulturist died in January. He was born at Hillsboro, N. H., August 29th, 1811, and moved to Muscatine, Iowa, in 1837.

DECEASE OF SOME NEW YORK HORTICULTURISTS.—From Mr. Barry's address before the Western New York Horticultural Society, we learn for the first time, of the decease recently, of Thomas Wright, Dr. Farley and Josiah Salter; all with more or less of a national reputation, and all worthy gentlemen to whom successful horticulture in America owes much.

DIEGS AND MEDICINES OF NORTH AMERICA.—No. 8 of Vol. I, is devoted to a full account of all that relates to the Black Snakeroot, or *Cicimifuga racemosa*.

THE BOTANICAL GAZETTE.—This magazine, through which the leading botanists of the country communicate their thoughts and discoveries, has been considerably enlarged, and will, no doubt, receive increased patronage. Dr. John M. Coulter with Professors Barnes and Arthur as his assistants, still continues chief editor. It is published at Crawfordsville, Indiana, at \$2 a year.

SCRAPS AND QUERIES.

FLORAL AID TO PHOTOGRAPHS.—Our correspondent, Mr. Van Aken, of Elmira, has hit on a very pretty idea by which the language of flowers may be given effective value in connection with the photographs of our friends. They can be so arranged that any particular flower desirable may appear garlanded about the picture, which may thus be made to enter into any association that we please.

Taking these sweet peas for example, one is reminded of the touching poem of Mrs. Howitt. The sorrowing mother will not be comforted for the loss of her dear one. The little brother of the loved and the lost tries his hand at cheering her. Only come and see the sweet peas now in bloom that Amy planted!

"Put by thy work, dear mother,
Dear mother come with me,
For I've found within the garden,
The beautiful sweet pea!

And bending on their stalks, mother,
Are roses white and red;
And pale-stem'd balsams all a-blow,
On every garden-bed.

Put by thy work, I pray thee,
And come out, mother, dear!
We used to buy these flowers,
But they are growing here!

Oh, mother! little Amy
Would have loved these flowers to see;
Dost remember how we tried to get
For her a pink sweet pea?

Dost remember how she loved
Those rose leaves pale and sere?
I wish she had but lived to see
The lovely roses here!

Put by thy work, dear mother,
And wipe those tears away!
And come into the garden
Before 'tis set of day!"

It was a tender appeal. And we have endeavored to second it by placing a portrait of "little Amy," as we imagine she may have looked, in the midst of a garland of the flowers which she planted. Even the most sorrow-stricken mother could scarce shut her heart against some gleam of pleasure at an association such as this.

RICHARDSON COUNTY, NEBRASKA.—Prof. C. E.

Bessey says: "This county lies in the extreme southeast corner of the State. It has long been noted for its fine apples, which are annually ship-

ped in large quantities. Pears are not much grown. Peaches produce a crop about once in five years; two or three years ago the peach crop

was so large that they sold for only a few cents a bushel. The berry crop is usually good, but this industry has not been as yet fully developed.



"Little Amy" and the Sweet Peas.

ped in large quantities. Pears are not much grown. Peaches produce a crop about once in five years; two or three years ago the peach crop

Grapes grow well and are very productive, especially along the bluffs of the Missouri river. The cold weather of the early part of January reached

something more than twenty degrees below zero in southern Nebraska, thus destroying all hopes of a peach crop in that region."

[It is not the degree of temperature alone that forms the sole climatic condition favorable or un-

favorable to the peach bud. The circumstances outside of mere low temperature have been very favorable, and we should not be surprised if the peach buds are not found "sound as ever."—Ed. G. M.]

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

NORTH, CENTRAL AND SOUTH AMERICAN EXPOSITION, NEW ORLEANS.

BY J. E. W.

The Superintendent of Horticultural Hall, E. F. Nelson, is constant in his exertions to improve the already beautiful winter garden. Its beds of tropical and semi-tropical plants have made it the centre of attraction for lovers of the beautiful.

The latest additions are from the nurseries of Mr. John Rock, San Jose, Cal. Plants from these nurseries were much admired in plant displays in the exhibits at the World's Cotton Centennial last year. The present contributions from these nurseries are mostly evergreens. They make a splendid addition to the winter garden. Magnificent specimens of Date Palm, California Fan Palm, the famous big trees of California, a collection of Eucalyptus, the Japan Cypress, the famous Red Wood tree, also Cedus Deodora and many other attractive plants. The changes in the greenhouse have not been great, although it is expected there will be next month.

The Government Building if not the most attractive portion of the Exposition is certainly very instructive, affording as it does grand and exhaustive displays of the industries and resources of the States and Territories of the Union. These displays far exceed those of last year. The government displays of last year are missing, but it is a question if the elaborate State displays do not compensate for their absence, especially as the wish is to show to our Southern neighbors what we can offer them in exchange for their productions and thus inaugurate a more extended trade with them.

The fruit displays in the State exhibits are certainly creditable. It seems to me that Arkansas leads them all; its present exhibits I think superior

to any individual State display in either Exposition. Apples in the green state embrace near two hundred varieties, all splendid specimens, mostly from the northwestern portion of the State. In jars she has near one hundred varieties of summer apples, also pears, Japan persimmons, grapes, peaches, and a great variety of berries. To me it is a great surprise to look at the magnificent displays of fruits by all the newer States and Territories. It truly seems that the older States will have to look out for their laurels in the fruit line.

Mr. I. Innenat has on exhibition in Machinery Hall a machine for cleaning and preparing for use Jute and Ramie taken in their rough state from the fields where grown. It would seem that he has perfected his machine; if so he will really be a second Whitney to the Southern States. The cotton States use millions upon millions of yards of jute bagging every year. The jute can be made a very successful crop in the Southern States—the only difficulty is to sufficiently cheaply prepare it for use. With a machine that will properly and cheaply do its work the South will have a new paying crop and millions of dollars that now go abroad can be kept in the country. What it would do for jute it would do for ramie cloth firms which nearly rivals silk.

It is fifty-eight years since I first came to New Orleans. I have no recollection of seeing in that time such intensely cold weather as we have been having for the last few days. Ice in gutters, ice everywhere. I fear for the orange trees and cane.

Jan. 12th, 1886.

THE PENNSYLVANIA HORTICULTURAL ASSOCIATION.

BY T. B. M.

This Association held a very successful meeting at Reading. Mr. Calvin Cooper was again re-elected President, and Mr. E. B. Engle, Secretary.

The next annual meeting is to be held at Bethlehem. Over 100 new members were enrolled. Much of the success of the meeting was due to Ex-President Judge Stitzel and Cyrus T. Fox, Secretary of the Berks County Horticultural Society. Prof. Buckhout of the State College, gave an admirable address on the adornment of home grounds, which will, no doubt, have a good effect in stimulating gardening in purely farming districts. An interesting discussion followed, participated in by A. W. Harrison, of Germantown, S. B. Parsons, of Flushing, N. Y., Rev. W. W. Meech, of Vineland, Col. McFarland, of Harrisburg, and Josiah Hoopes. Mr. Parsons would not plant a tree within 200 feet of a dwelling house, though we do not know his reason. The annual report of the General Fruit Committee, Cyrus A. Fox, was one of the best features of the meeting. Apples in Pennsylvania seem to be in the "off" year, though many full crops were reported. Pears, always a certain crop in Pennsylvania, were more abundant than usual. Peaches are so troubled by yellows, that cultivators are well nigh disheartened. Plums are successful where intelligent shaking is practiced, and the talk about "curculio proof varieties" deemed, as most people now know, arrant nonsense. The quince is growing in favor as a profitable market fruit. The cherry suffered some from late spring frosts and the English sparrow; but on the whole proved a satisfactory fruit. Grapes do well everywhere, and much value found in paper bags for fruit.

Small fruits seems not to have been very satisfactory last year to Pennsylvania fruit-growers; while the culture of vegetables seems to be more successful and more profitable than ever before. The taste for ornamental shrubs and plants is growing amazingly. In storing and preserving, the refrigerator and retarding houses around Reading, have been found very satisfactory. Fruits are kept till glut in the market are over, when fair prices are realized. Sunflower oil is getting to be a profitable horticultural crop, being used by paint factories instead of linseed. "Agents, who sold anything for the true kind," came in for their usual scoring.

Edwin Satterthwaite furnished some excellent practical remarks on vegetable culture for market.

Dr. Funk, of Boyertown, gave an explanation of his retarding house. He said that he is satisfied that a large body of ice is necessary to achieve success. He built a house to contain 75 tons, which answered very well, but when he needed the house most the ice was all gone. He

is now putting up a house, which will require over 600 tons of ice. This building is 40 by 45 feet, constructed of stone, the walls being 20 inches thick, every crevice being filled out with mortar and spalls. Inside the wall is dead air space 6 inches wide, and then a space 3 inches wide filled with ground charcoal. The cold storage room is 8½ feet high in the clear, and the ice chamber 12 feet high. At the front entrance there is a solid door, opening into a vestibule large enough to contain three barrels. The vestibule opens into a packing room, from which there are three doors 4 inches thick, opening into three separate apartments, in which fruit is kept. There can be no atmospheric change in the rooms. There is an open surface above the ice chamber, with caps over the joists to catch all droppings.

Mr. J. H. Bartram, of Chester county, being called upon, said that his refrigerator house is only 16 feet square, and 16 feet deep, requiring about 100 tons of ice. It is partly in the ground, and did not cost over \$300. He then described its construction after the manner of any ice house. The general temperature is 37°.

Dr. Funk, in reply to further inquiries as to the construction of the floor, said that the floor is of simple construction of yellow pine, with about 4 feet between it and the ground. There is a mortar floor underneath to keep out the rats. He is able to put in a ton of ice a minute by means of an elevator, worked by an endless chain, the ice being in large cakes, weighing about 200 pounds each, as the ice packs better in large masses.

Dr. Funk said that he used to have to sell his Bartlett pears when ripe, for \$1.50 a bushel. Now he sells them about Christmas for \$4.

Specimens of the excellent Reading pear, that had been preserved in retarding houses, were on exhibition.

EDITORIAL NOTES.

PENNSYLVANIA HORTICULTURAL SOCIETY.—This body has gotten up a very handsome schedule of its proposed work for the coming year, copies of which may be had from the secretary, A. W. Harrison, Horticultural Hall, Philadelphia. A new idea is a calendar on which the date of monthly meeting nights is stamped in red.

PENNSYLVANIA STATE HORTICULTURAL ASSOCIATION.—By favor of Mr. Cyrus T. Fox, the energetic secretary of the Berks County Agricultural Society, we have the full text of Mr.

Shearer's essay on the history of fruit culture, which was regarded as one of the most valuable contributions to the meeting. He takes no stock in the guess some give that the climate has changed against the interests of fruit culture. Fruit trees want feeding; they do not get the food they require as a general thing. The "degenerate climate" has proved no match for his well fed trees. He does not prune at all except for grapes.

There is no more favorable soil or climate in the world than the neighborhood of Reading for success in apple culture. He grows Baldwin largely, but chiefly because it keeps well with little trouble. Forty trees to an acre is enough for the apple. Keeps the ground clear of vegetation, by keeping the cultivator at work till middle of July. Keep out the borer, which is the chief enemy of apple culture. He has never had a visitation of pear blight. Pears require richer soil than apples. His most profitable variety is Bartlett. The home market is better than that of New York. The Reading or Hock pear is not regarded as reliable as it was fifty years ago. Peaches require even richer food than the apple or pear, and the culture is profitable where people are not too sanguine of success. He believes the peach yellows hereditary in one part of his essay, and that it is the result of starvation in another. In regard to the borer he says:

"This can be successfully done by the application of the following wash: 4 gallons whitewash, 2 quarts clay, 2 quarts fresh cow droppings, 1 quart lye that bears an egg. Mix these ingredients to a proper consistence with water. Remove the ground from the top of the roots close to the tree, and apply the wash to the exposed roots and to the whole trunk of the tree, including the hollow between the lowest branches. Cover the roots again with earth. The wash can be applied very expeditiously by means of a corn-broom; and no special pains need be taken against splashing any of the substance on the ground, for the women will raise no objections to such mishap, and the tree will eagerly appropriate the drippings, and put them where they will do the most good. The wash should be applied twice every season, namely, about the end of May and the end of August. I have found this an infallible protection of peach and apple trees against the borer. For apple trees one application of the wash every season is sufficient."

It is not good to keep the ground clear of vegetation for the cherry. It does best in grass. Low land is its abomination. Grapes like pruning because otherwise they overbear. New varieties are yet desirable. He said:

"The perfect winter apple has yet to come. The same may be said, even more emphatically, of the

pear. The wished-for apple must be large, red, of the finest flavor, melting, a more than good but not an enormous bearer, a vigorous, healthy and upright grower, hardy enough to withstand the coldest winters, and must keep in an ordinary cellar until a new crop has matured. These qualities are partly possessed by many different varieties of the apple; but not until they are all united in one, shall we have the true *ne plus ultra*, seek-no-further apple.

"We are sadly in want of a pear that will keep throughout the winter and spring, and be good for use during these two seasons. We have no variety that approaches these requirements in any appreciable degree. Can we not with proper endeavors supply this need?"

"There are many good peaches, but they are more or less liable to suffer in our latitude from the extreme cold of winter. Our efforts should be directed towards hardening the trees. The 'Globe' peach, if I may be permitted to say a word about it, possesses all the desirable qualities of a perfect fruit. The tree is an upright, symmetrical, thrifty and vigorous grower, and good bearer, the foliage is healthy, and the fruit is very large, color yellow with a red blush, and flavor of the best quality. It would be desirable, however, if the 'Globe,' like our best peaches generally, were more iron-clad, the better to endure the extremely cold winters to which the Northern States are exposed."

NEW YORK HORTICULTURAL SOCIETY.—Arrangements are being made by which the much-talked of roses, Her Majesty and the Bride, are to be prominent features of the March meeting.

WESTERN NEW YORK HORTICULTURAL SOCIETY.—This excellent Society has held its usual successful meeting, some account of which we have received as we go to press, and from which we expect to draw to the profit of the reader from time to time during the coming season.

MASSACHUSETTS HORTICULTURAL SOCIETY'S LECTURES.—A programme of topics for every week from January 2d to April 10th, has been issued by the Society, and may be had from the Secretary.

DES MOINES FLORAL ASSOCIATION.—Mrs. Kate E. Waltz, writes: "The florists of Des Moines and vicinity, met on the 3d day of Dec., and organized what is now known as the Des Moines Floral Association. Peter Lambert, the oldest florist in the city, was elected President; the next oldest, Mr. R. L. Blair, was made Vice-President, with your humble servant, Secretary, and Mr. E. W. Bergstrom, Treasurer. We now meet first Thursday in each month, with membership increasing and all greatly interested. This is all for this time, but taking it for granted that you like to hear from such, I promise you shall hear from us whenever there is anything new to report."



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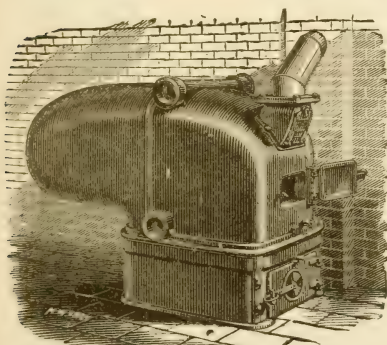


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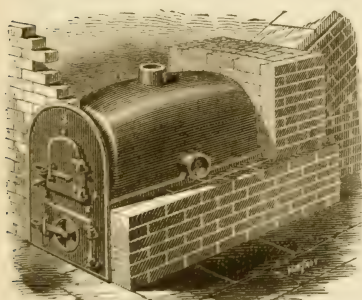
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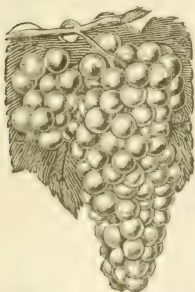
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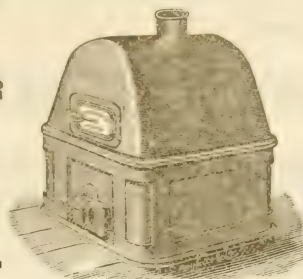


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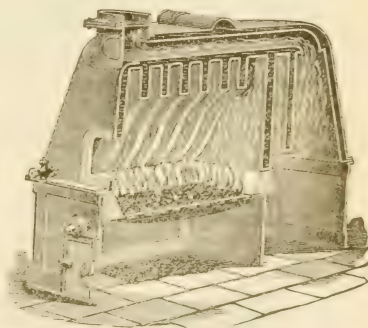
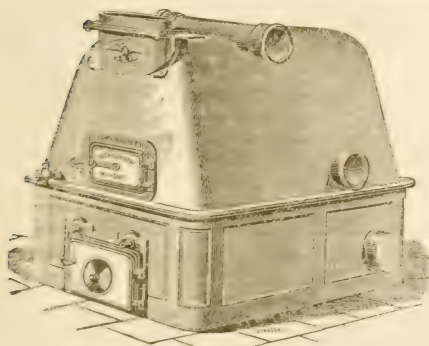


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
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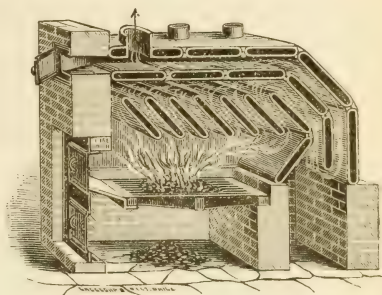
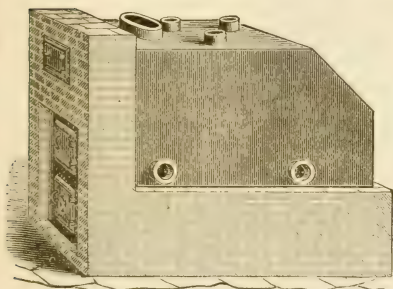
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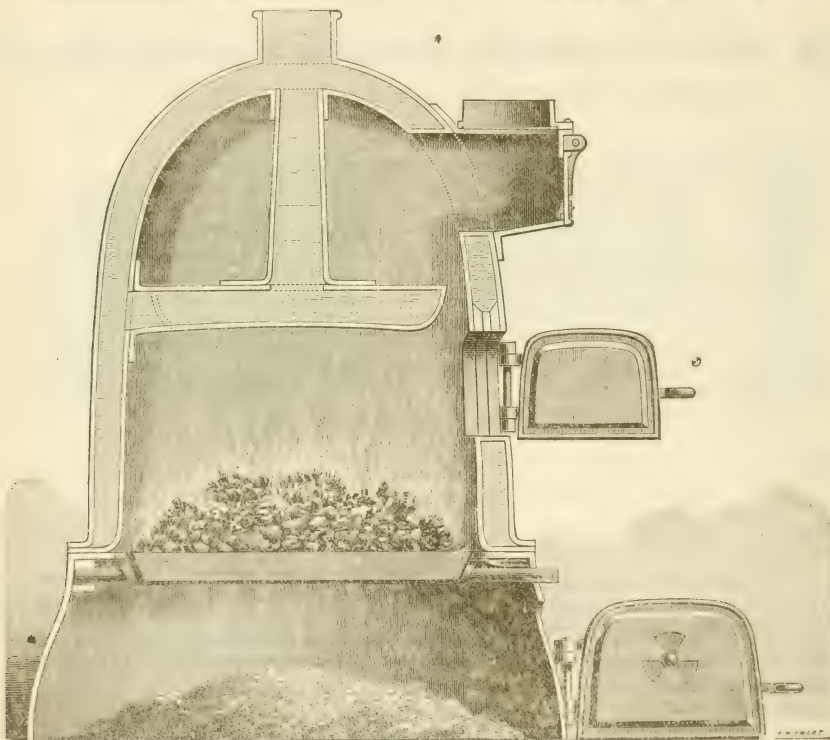
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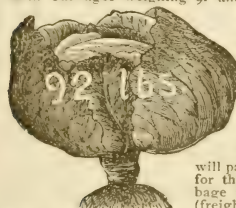
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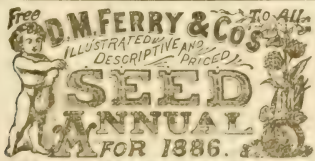
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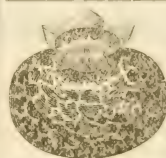
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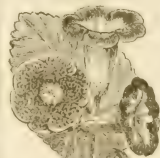
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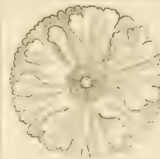
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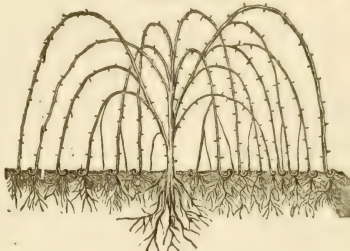
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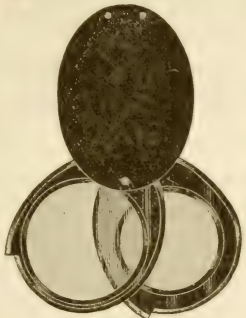
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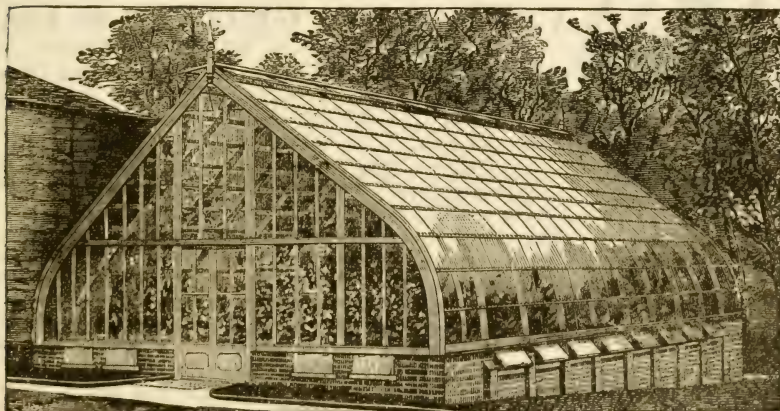
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Edited by THOMAS MEEHAN.

VOLUME XXVIII.

APRIL, 1886.

NUMBER 328.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

Our Southern correspondents seem very sad over the unusual touch of winter they have experienced this season. They have been so full of sympathy with those who are ruled by a boreal hand, that their sorrowings are probably more severe than they might be. To a Northern mind it is the winter that gives the greatest charm to spring. The revival that follows the bleakness of winter, has a pleasure equal to that which the spring itself gives. Only those who have gone through a Northern winter can fully appreciate the joys of spring. It was one of these that sings:

"Now is the high tide of the year,
And whatever of life hath ebbed away
Comes flooding back, with a ripply cheer.
Into every bare inlet, and creek, and bay.
Now the heart is so full that a drop over-fills it,
We are happy now because God so wills it;
No matter how barren the past may have been,
'Tis enough for us now that the leaves are green;
We sit in the warm shade and feel right well
How the sap creeps up and the blossoms swell;
We shut our eyes, but we cannot help knowing
That the skies are clear and the grass is growing;
The breeze comes whispering in our ear,
That dandelions are blossoming near,
Joy comes, grief dies, we know not how,
Every thing is happy now."

Near all our large towns and cities, the spring of the year finds a large number of new houses being started or in the course of alteration or completion; this brings the gardening question prominently forward. There is generally some chance

of getting good advice from intelligent landscape gardeners, but unfortunately few persons know the importance of looking for one, or how to distinguish between a genuine landscape gardener and a mere garden laborer; hence it is that hundreds and often thousands of dollars are uselessly spent in remedying evils that come from the want of this knowledge. Generally all the main work of the landscape gardener is left to the architect, who makes a pretty picture plan of the grounds, but which is found to be in practice enormously expensive or positively ugly. The location of roads or walks, questions of drainage, and the knowledge of how work will look when trees and shrubs grow up, are matters that only competent landscape gardeners thoroughly understand. When undertaking to build or improve, and one is thinking of sending for an architect, it will generally pay handsomely to consult at the same time with some landscape gardener, and let the architect's work and his go along together. But it is very important to distinguish between a mere grader, road maker, or "practical gardener," and a real landscape gardener.

In suburban landscape gardening there has been a tendency of late years to abolish all line fences and especially those which separate the front yards from the street. This is of course only in cases where the communities have emerged

from barbarism far enough to forbid all cattle running loose in the streets. To our mind the essential element of home in its best signification is privacy, and a garden to which one can retire for a while from the busy hum of the outside world, is one of the best features of this domestic ideal. If we wish friends to enjoy our gardens as well as ourselves, we can admit them. Large places often have the rule that at stated times the whole public has the privilege of the grounds. The only ground on which we can see the absence of front yard fences abolished is the public spirit that sacrifices the ideal garden for the public benefit. There can be no doubt that the streets along such lines are much more attractive to the general community than when fenced out of gardens as in the general plan.

But there is not near as much objection to this plan when the houses are on an elevation. Some privacy is then secured. The domestic idea is not wholly abolished; and while the stranger "without the gates," or rather, traveling along the roadside, may point with pride to the residences of certain citizens, the dwellers within may feel that they are homes withal. We have been struck with the force of this argument for the fenceless idea, in elevated



Beautiful Home Grounds.

places, by a picture in Mr. Frank J. Scott's new edition of *Beautiful Home Grounds*, which the publisher has kindly permitted us to use. It may be some satisfaction to the author to know that

it has been the means of our partial conversion to a system we have before been in no degree favorable to.

April is a good planting month. There is not much art in planting trees, though it is often much of a mystery. Not to let the roots dry for an instant between taking up and planting, everybody knows, but everybody don't do it; in fact, everybody deceives himself. We have seen this distinguished individual leave the tops of trees exposed to the sun, with a mat or straw thrown over the roots, and think all was right—or heel in for a day or two, by just throwing a little dirt over the roots. This is a little good: but everybody's fault is, that although this may be ten minutes of good, he expects to get ten hours', or even ten days' value out of it, and thus he suffers more than if he had done nothing; because he forgets that the branches evaporate moisture from the roots in a dry wind, and the juices go from the roots through the branches, very nearly as well as directly to the air from the roots themselves. So with heeling in. The soil is thrown in lightly, or at most just "kicked" down. "It is only temporary," very few of the roots come in contact with the soil. They can draw in no moisture to supply the waste of evaporation, and thus they stay day after day—everybody satisfied because he sees the roots covered; really worse than if they had been exposed. We have no doubt that more trees are lost from imperfect heeling in than from any other cause whatever. Of course, if the tops be covered as well as the roots, there is less waste of moisture and more chance of success.

We approve of thick planting. Trees grow faster for one another's company, and a place well filled at once, saves many years of time to see them grow. Those not wanted after the place has grown some, can be transplanted to other parts of the ground. Where thick planting is to be adopted, of course care must be taken in locating those permanently to remain. But the trouble usually is that a thickly planted place is rarely thinned. People hate to see a tree cut down. In the public squares of Philadelphia the trees are crowding each other till the whole square looks like a crow's nest. Grass will not grow, first, because of the shade; secondly, because of the poverty of the soil, and thirdly, because of the drought from so many tree roots; and though the city of Philadelphia appropriates \$25,000 a year to improve the squares, one each year in succession, it would be as much as the commissioner's place is worth to "cut down a tree." And this is

an example of what is often seen. The only remedy is, to educate the public to plant thickly at first; but to thin every few years till they are of judicious width apart.

COMMUNICATIONS.

CROOKED TREES.

BY D. S. GRIMES.

I do not remember of ever hearing a word spoken in favor of crooked trees, yet there is something novel, striking and lovely in their peculiar growth and varied outlines, that attracts attention.

Their grotesque forms—sometimes bending over a lake or stream of water, until their moss-covered trunks almost touch the surface; or back in the forest reclining in a half prostrate position with branches nearly reaching the ground; or again, where the bodies, though standing erect, are full of crooks and kinks; here a crotch formed near the ground, and there a cluster of trees growing out from the stump of a broken tree, forming the foundation for such nice rustic seats. Yes, I love crooked trees, because of their odd deformities, for they are original, and not copied.

I often wonder why people who have seen natural forests, persist in planting all straight trees in parks and lawns with the view to imitate nature. It is quite different with trees for the street, for they are on "dress-parade." Street trees should not only be straight, but stand in a straight line, like a regiment of well-drilled soldiers drawn up on review. It is also different with trees planted for mechanical purposes whose prospective value lies in the quality of the timber produced. And in evergreens, whose natural order and beauty is in a straight, symmetrical form.

But, for parks and lawns, where an easy, natural appearance is the object desired, all straight trees with a rigid, set formality, in arranging and planting, is not admissible to good taste in landscape architecture. They are too stiff and formal, void of that easy, graceful variety so essential to good effect. A group of shade trees set just so many feet and inches apart each way, standing like so many telegraph poles on their best behaviour, is a little too "precise" for the present liberal ideas in landscape embellishments.

I love to see groups of trees where the straight and crooked, the elm, the maple, oak, and ash, all growing in irregular order, just as we see

them in their native woods, where all apparent restraint and dull formality is thrown off, and where a comfortable seat can be found against a leaning tree, affording both rest and shade. How much nicer it would look in planting trees near the water's edge, to forget man, and imitate the god of the forest, where a number of trees would bend their irregular forms reflecting beautiful shadows in the water, instead of a row of all straight trees, set in such regular order that the first tree met, indexed the form of all the rest.

It is the never ending variety of scenery in our mountains and native forests, that attracts attention, and not the regulation monotony of the plains. In arranging trees for ornament, study to be original, and not to copy. Avoid sameness and practice variety. *Denver, Colorado.*

[Excellent suggestions; undoubtedly one of the most pleasing drives in Fairmount Park is under the grove of crooked Catalpas. The next interesting drive is under a grove of very strait Ailanthuses. Each derives advantage from contrast with the other.—Ed. G. M.]

BULBS AND TUBERS FOR OUT-DOOR CULTURE.

BY MRS. T. L. NELSON, OF WORCESTER, MASS.

Bulbs, tubers and corms, or hard bulbs, are storehouses of food for the embryo plant, and serve to nourish it until the roots start. In the Northern States we have many indigenous lilies, arums, but few of them are cultivated, because they are preferred in their native haunts. If cultivation would improve them it would be worth while to transplant them to our gardens, but in many cases it is almost impossible to make them grow at all—much more to make them grow satisfactorily. It is best, therefore, to let native plants and bulbs alone, unless we have a place as nearly as possible like that from which we take them. The native lilies, *Canadense* and *superbum*, however, do well in cultivation, and will repay the cultivator.

It would be of no practical use to speak in this essay of spring-flowering bulbs, such as snowdrops, hyacinths, crocuses, tulips and narcissi, as these are, or should be, already in the ground. The subject of bulbs and tubers is a broad one, but this essay will be confined to such bulbs as will be of use in our gardens in Massachusetts. We must take special note of the country where our bulbs are native, and endeavor to imitate the conditions of sun, soil, and climate there. Like bedding plants, many bulbs are benefited by annual change of location in the garden.

Lilies are among the most reliable bulbs after the bloom of the spring flowers is past. *L. candidum* (the common white lily) is one of the hardiest, but one of the most particular about the time

of planting. This must be done when the bulbs are in a dormant state, about the last of August or first of September. After that time they start again, the leaves remain green throughout the winter, and the bulbs will not bloom if disturbed after they commence growing. *L. longiflorum* is not as hardy as many of the species, because the bulbs are liable to start in the fall if the weather is warm. It is best to cover early with leaves or light compost, as a hard frost after the bulbs have started almost invariably kills them. They are easily transplanted. *L. auratum* is quite uncertain, even with the best protection. A few bulbs may be planted every year, and the cost counted as of bedding plants, for they are worth growing if they afford one season's bloom. Some of them will survive the winter and bloom again, but they cannot be depended upon. All the varieties of *L. speciosum* are hardy. *Album præcox* is a much finer variety than *album Rubrum*; *roseum*, *punctatum*, *Melpomene*, and *purpuratum* are all desirable. *L. pardalinum* (sometimes called Leopard lily,) is fine and hardy. *L. excelsum* is of bright buff color and one of the most beautiful. *L. Brownii* is rare and costly, and from its peculiar purple outside and the pure white waxen inside presents a striking contrast to *longiflorum* and others of that class. *L. Leichtlinii*, *L. monadelphum* and *L. Parryi* are fine yellow varieties. All the varieties of *L. Martagon* (the Turk's Cap lily) are good. *L. Chalcedonicum* (Scarlet Turk's Cap) is one of the best. *L. tenuifolium*, one of the earliest, if not the earliest, has slender stems and foliage and a lovely scarlet flower with reflexed petals. *L. pomponianum verum* is much like *L. tenuifolium*, but a little more robust and blooms a little later. There are many inexpensive varieties, like *Thunbergianum*, *umbellatum*, and the varieties of *tigrinum*, which are showy and perfectly hardy. Lilies are easily cultivated, but they will not thrive on low land, unless it is thoroughly drained; water at the roots or wet, heavy soil is fatal. The soil should be light and rich; it must be remembered that it is not the bulb that needs feeding, but the roots beneath. If annuals or some light bedding plants are planted between the bulbs it will serve to keep the surface cool and moist.

The iris in its many varieties is one of the best garden tubers. They increase rapidly, and all the varieties are hardy. The English, Spanish and German species are all good, but the *Iris Kœmpferi*, from Japan, is the best. The iris has a wide range of color, and some of the blooms strikingly resemble some of the varieties of valuable orchids. All of the family are of the easiest culture, only requiring considerable moisture.

Herbaceous pæonies are reliable garden plants, for they are never winter-killed. They are very showy and especially adapted to large gardens, affording a succession of bloom all through the early summer months. *P. tenuifolia* has small blooms of a clear bright red, not unlike a rose, and finely cut foliage.

Gladioli are by far the most valuable of all the summer-blooming bulbs. They are easy to grow, easy to keep, and exceedingly valuable for cut

flowers. If a spike is cut when there is only one flower out, it will keep on blooming at least a week. Gladioli are most effective when planted in groups among low or medium-growing plants. The foliage must be allowed to grow in order to mature the bulb or corm which is forming at the top of the old one, and if grown with other plants the ripening foliage is partially concealed, and is not unsightly, whereas a bed of gladioli with the flowers cut off is anything but attractive. Water is essential to their growth. Whenever the ground becomes dry it must be watered so that the roots beneath the bulb will be thoroughly wet. If one wants a bed for cutting, it is just as satisfactory and very much cheaper to buy a hundred or two of first quality mixed bulbs; but if only a few are wanted, by all means get named varieties: Eugene Scribe and Mary Stuart, pink; Meyerbeer and Phœbus, scarlet; Nestor and Paotole, yellow, with colored markings; Martha Washington, clear lemon color; Beatrix and La France, white or nearly so; Leander and Baroness Burdette-Coutts, mauve; and Africaine, very dark, are some very fine varieties, and none of them are very expensive.

Tuberous-rooted begonias are very valuable in the garden. There are a great many varieties, and here again, unless one wishes for a few, mixed kinds do very well in the border; but if only a few are wanted, get named kinds, for then a variety of color is assured. The singled-flowered stand the rain better than the double, for the former shut closer, and the rain cannot penetrate the blossom. The flowers keep closed in cloudy or rainy weather, so that one can tell pretty certainly whether it is going to rain or not by glancing at a bed. Sometimes they are about half-closed and undecided, but not generally. Mont Blanc is the best white variety. Annie Laing is a very fine kind, with large pale pink flowers, of great substance. Countess of Kingston is a very large, fine scarlet. Robusta perfecta and R. perfecta rosea are very fine varieties. Pearceii has beautifully marked foliage and bright yellow flowers. These flowers need the sun only part of the day. The tubers should be dug late in the autumn, dried in boxes, and stand in a cool place, giving them no water except when they get too dry, and then only so that they shall not wither. If kept too moist they will decay. They need absolute rest when in a dormant state. They are easily grown from seed, and the seedlings bloom the first year, if the seed is sown early enough.

Gloxinias can be grown very finely in a cold frame, and planted out by plunging the pot. The location should be the same as for tuberous-rooted begonias, and they are easily grown from seed under the same treatment. If they do not bloom the first season the bulb will be of good size and easier to keep over winter. They require to be kept dry while resting. A frame was left unprotected during several heavy rains and the first time it was expected to see the foliage entirely spoiled; but by putting on the sash and shading with newspapers until dry the plants were saved from all injury.

Some of the summer-blooming bulbs are better

kept in pots or tubs. There are many places in the garden and about the house where a pot of *Vallota purpurea* is very ornamental. *Amaryllis lutea* is a hardy variety, blooming in early autumn when yellow flowers are scarce. *A. Hallii* is a lovely pink variety, blooming in August. The *Zephyranthes* in all its varieties of pink and white is desirable. They require no care beyond planting in spring, digging up in autumn, and storing in a dry place. *A. Belladonna*, major, minor and alba, are all summer-blooming bulbs. They flower in August and September, and require entire rest after they have matured their foliage. *Amaryllis Johnsonii* will bloom in the ground, and is used by some to bed out in the summer by keeping the bulb dormant through the winter. *Ismene calathina* is beautiful in the garden, the plant being fine without the flower. *Choretis albus* and *Pancratium calathinum*, like all those mentioned in this paragraph, belong to the *Amaryllis* family, and require the same general treatment.

The tuberose is as easily flowered in the ground as any other bulb, but as it takes about four months to bring it into flowering, it must be started either in a hot-bed or a greenhouse; but if you have neither of these, plant the bulbs, after the ground is thoroughly warmed, in a sunny place, and after they have started, give plenty of water. When they are well budded, pot them in rich soil, so that they can be removed to shelter when there is danger of frost.

Tritonia UVa grandiflora (Red-hot Poker) and *Hyacinthus candicans* are two conspicuous plants which form a fine contrast to each other. *Agapanthus umbellatus* is one of the few really blue flowers. It does well taken from the pot and planted in the border. *Caladium esculentum*, *Richardia alba maculata* (a very ornamental species of *Richardia* *Æthiopica*, our common calla) and *Amorphophallus Riveri* are desirable plants. The *Tigridias* (Tiger flowers) in the different varieties are all showy. *T. grandiflora* alba forms a beautiful contrast to *T. conchiflora* and *T. Pavonia*. *Milla biflora* is quite new, and has slender, rush-like foliage, and white tubular star-shaped flowers, on long slender stems. The dahlia is a very important tuberous-rooted plant; its only drawback is that it requires too much room to grow it; but there are places where such plants are very much needed, and the pompons and single varieties are especially desirable.

[This excellent essay was contributed to the weekly meeting of the Massachusetts Horticultural Society on February 13th.—Ed. G. M.]

EDITORIAL NOTES.

DISEASES OF THE ROSE.—The first of the diseases of which M. de Thumen speaks is the most common and well known of the three; it is a mould which is caused by the rapid development of a mildew similar to that which affects the vine;

this external growth is known to botanists by the name of *Oidium leucoconium* in the early stages of its development, and under that of *Sphærotheca pannosa* when it has attained its mature condition. It is known that this parasite covers the roses with a white film, amid which are specks and spots of a brown color; propagates very rapidly, and its mischievous results are only too well known. On the shrubs which it attacks the flowers are either malformed or entirely abortive. All the varieties are not equally liable to this disease, but certain varieties are attacked with it every year. Happily, sulphur is an excellent remedy for mildew in roses as well as for *Oidium* on the vine; only, in order to be fully efficacious, the precautions which the learned German prescribes as the result of his own experience must be carefully followed. The flowers of sulphur must be employed not once only, but several times in the course of the summer. The application of the sulphur must be made on a fine clear day; when there is every appearance of the fine weather lasting; then the work should be begun early in the morning, in order that the sulphur may be subjected to the rays of the sun for as long a time as possible. Under these conditions M. de Thumen says that he perfectly cured, last year, some infected rose trees which subsequently flowered finely.

The second disease of roses to which this observer alludes, is not so well known as the first mentioned, nevertheless for several years it has very frequently been seen in gardens. The German gardeners call it brand (burning), a vague term which is applied in Germany to many diseases of vegetables. It is caused by a little parasitical fungus, *Asteroma radiosum*. This parasite causes specks of a dark greenish-brown on the upper surface of the rose leaves, which are often not more than a millimetre in diameter; but which sometimes cover the whole of the leaf. Soon after the appearance of these spots the leaves fall, being in some cases still green, while in others they have become more or less yellow. *Asteroma*, not being confined to the surface of leaves as the mildew is, but thrusting its filaments through their tissues, the war against this parasite becomes therefore very difficult. The great attention paid to this by the well-known Berlin naturalist, Professor B. Frank, has disclosed the fact that this fungus produces a great number of excessively tiny reproductive organs; that is to say, the spores, which are dispersed and spread by the rain and dew. This water, bearing the spores, trickles down the leaf-stalk to the base of the leaves,

where it deposits them on the bud which is formed there, therefore the shoot springing from this bud is necessarily tainted with the disease, with the germs of which it was early infected. Whether the plants thus infested with the parasite are placed in another garden, or whether buds from the diseased plants are budded on healthy stocks the disease will assuredly be propagated. Thus convinced of the impossibility of dealing with the parasite, which grows chiefly in the interior, by any external remedy, M. Frank sees no other alternative but not to make any use of the gardens thus infected; but this would be a great barrier to trade. M. Thumen, on the other hand, recommends a solution of salicylic acid, which kills the spores of the parasite. In many cases he advises that the plants or grafts sent out from the nursery in which this fungus exists should be plunged for an hour in a solution of salicylic acid. The infected leaves should be burnt immediately, and the bushes should be syringed with salicylic acid in early spring.

The third disease of roses is of less consequence. It is due to a parasitical fungus, *Cæoma miniatum* (*Phragmidium subcorticium*), which rarely appears on the leaves, but more frequently on the leaf-stalk, flower-stalk, calyx, or flower. It forms cushion-like projections of an orange-red color (*Æcidium*). The disease is usually not very fatal, but where it becomes so it is better to burn the infected plants. *Abstract from an article in the "Wiener Illustrirte Garten Zeitung."*—*From Gardeners' Chronicle.*

DRILLING ROCKS.—By means of a treadle, worked by the foot, Minnis Haden, a colored blacksmith, of Montgomery, Va., has invented and patented a method by which one man can hammer and hold the drill in blasting rocks, or in many kinds of blacksmith's work.

DESTRUCTION OF THE MOLE.—A Sunday-school urchin thus informs his teacher: "One day Billy come home holdin' a little mole by the tail, which a bad boy had co't and guv him, and it was alive. Wen my sister see him she said, 'O, you crewel, crewel boy, thro it in the fire this minnit.'"

DAHLIAS.—The practice of pegging down ever-blooming roses so that they will cover completely the surface of the bed, is well known to produce very pleasing results. It is said that pegging down Dahlias proves quite as satisfactory.

PUBLIC PARK FOR KANSAS CITY.—It is proposed to take a beautiful tract on Bush Creek, south of the city, for this purpose.

NEW OR RARE PLANTS.

AN UPRIGHT ELDER.—This very pretty shrub is known in France as *Sambucus fastigiata* and *S. columnaris*, as well as by others of similar import. It grows thick and upright like an Irish Juniper. The varieties of European elder do not, however, do well in the warmer parts of our country, though thriving in the mountain regions.

NEW POLYANTHA ROSE, MAX SINGER.—This dwarf species of rose—"the dear little creature," we have heard it called, has given a variety in France under the above name, resembling in size and color *Bengal Hermosa*.

WHITE-FLOWERED WATER CHINQUAPIN.—The Yellow Lotus, or Water Chinquapin, *Nelumbium luteum*, one of America's famous water plants, has produced a white variety, which is receiving marked attention from the cultivators of water plants in England.

ROSE, HER MAJESTY.—It is contended that this is the largest rose ever raised. It is one of Mr. Bennett's; the whole stock being purchased by Charles F. Evans, of Philadelphia. It is a cross between the hybrid perpetual, *Mabel Morrison*, and *Tea Canary*. The wood is stouter than of any known rose. The flesh-colored blooms have measured six inches in diameter. European orders are coming in for it, from America.

SCRAPS AND OUERIES.

THE WINTER AT CHARLESTON.—A lady writes: "We have had a sharp experience of your familiar Northern rigors this winter, and as our houses in this semi-tropic clime are built to woo the ocean breezes and to keep their occupants cool, we suffered greatly from the bitter blasts. Early in January, we were revelling in myriads of roses and the spicy odors of the acacia and fragrant olive. Suddenly a "blizzard" came, swooping down from the northwest, and blighted all the beauty and bloom of our gardens. Orange trees and shrubbery were killed, every flower and almost every green thing ditto, water pipes burst, darkies frozen—body and soul as it were—energies paralyzed and the whole community benumbed."

YELLOW ZEPHYRANTHUS.—A correspondent says: "I think is botanically *Habranthus Andersonii*; see page 55, February, 1885. P. H. Oberwetter, Austin, Texas, classes it as *amaryllidaceæ*; whilst in many foreign catalogues it is listed as a *zephyranthes*. Both are correct, as until lately they were one and the same class."

SWEET PEAS.—Mr. Van Aken says: "I introduce what I think will make a pleasing effect in my sweet pea row the coming season, by planting say 18 inches of the row to one distinct variety, then 6 or 8 feet of mixed varieties, then another distinct dab of a different color, and so on through the row. Take, for instance, for these dabs of distinct color, the *Adonis*, *Scarlet Invincible*, *Painted Lady*, *White*, *Black*, &c.

"I have a way of getting sweet peas in bloom very early out of doors, by planting the seed in flower pots in the house. Take any size pot, and fill with good soil, and plant the peas about an inch apart around the pot and near the edge, and then, by placing a brush in the centre about 2 feet long, the vines will cling to this and give ample support. If planted in February, or the first of March, they will be nearly ready to bloom by the time the spring frosts are past; and may then be turned out of the pots and placed in the open ground. These will commence to bloom from 4 to 6 weeks before the earliest spring planting in the ground."

IMPROVEMENTS IN ROSES.—A California correspondent says: "There is no flower with which so many experiments are being made as the rose, both by grafting and by seed. By these means no less than fifty new roses have been discovered during the past year, each of which is being planted in our different nurseries, and the most famous among these are the *William Allen Richardson*, orange yellow; *Marie Van Houtte*, yellow, changing to white, with rose spots; *Alfred Colomb*, brilliant carmine crimson, flowers very large; *Countess of Oxford*, bright carmine with soft violet shade, flowers large, full and cupped; *Elisa Boelle*, pure white; *La France*, latest variety, of which there are several, silvery rose centre, lilac rose—distinguished from many other sorts, through its wonderful bloom, even leaves and delicious scent; *Marie Baumann*, brilliant red; *Paul Neyron*, deep rose; *Rosy Morn*, delicate peach color, richly shaded with salmon rose; *Julius Finger*, pure white, lightly tinted with rose in the centre. Then comes the *Bennett*, which has long pointed buds, and is of a dazzling crimson color, similar to the *Hybrid Gen. Jacqueminot*; also the *American Beauty*, which produces immense dark pink flowers on every shoot. It never clusters, and therefore it can be cut with long stems.

"These are the principal varieties of the fifty new roses which have lately been introduced, not only to the gay world of fashion, but also to the student and the lover of nature."

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

The question often is what to do with pot plants in the summer? The great majority of plants do much better in the open air than under glass. It is found by experience that many do much better when taken wholly out of the pots, and set in the open ground. But it requires some judgment to select those that will stand such treatment. Those which come up with matted roots do excellently well; but if the plant be of a kind which has but a few wiry roots, they wither so much when lifted in the fall, that it is better to keep them wholly in pots. The Azalea does very well turned out, and even the Camellia does very well, if care be taken to keep down the red spider which works on them badly if the plant be set in a sunny place. Almost all soft wooded plants do very well indeed. Succulents like aloes, cactuses, and century plants, do very much better when set out in the open ground; and this is often a great advantage, as the huge tubs these plants are often kept in all summer are dreadfully troublesome things for people to handle. When only the plant is taken out of the tub, and the plant lifted to set in the tub, it is much pleasanter work, and then these succulents can be so arranged that they make pretty effects in the open air, and so do collections of other plants, for that matter. On many grounds, the large bed in which greenhouse plants are set out to board during the summer is among the chief ornamental features of the ground. Those plants which it is desirable to keep in pots may be set out where they can have the pots partially plunged in sand, tan, or coal ashes, and these may be arranged in a sort of flower-bed fashion, that will look neat. In our climate the summer heat is so great that it is found these summer pot plants do very well under the shade of trees, or on the north side of a wall or fence where they will get a little protection from the all day sun. Basket plants all do well, suspended under trees or other shady places, provided they can get a soaking of water at least once a week.

What we have written of greenhouse plants is of course equally applicable to plants from windows or other places in dwelling houses.

COMMUNICATIONS.

STEAM HEATING.

BY GEO. LAING.

I have read with interest the articles on steam heating of greenhouses, in your valuable columns. I will give your readers my experience in that line. To begin with: The boiler should be of sufficient size so as not to crowd it. There is nothing gained and fuel wasted by having the boiler too small. It should have 1 square foot of fire surface to 30 feet of glass, where the mercury gets 20° below zero, or more. For distributing the heat, 1 $\frac{1}{4}$ -inch pipe is the best size to use. It should be distributed over the space to be heated as much as possible. 2 feet 8 inches of 1 $\frac{1}{4}$ -inch pipe makes a square foot of heating surface; it will heat 5 feet of glass, and should be so arranged that half of the heating surface in each house can be shut off in mild weather. The steam supply to each house should be run about 18 inches from the ridge, this keeps the glass thawed and lets the sun in sooner.

The main supply pipe from the boiler should have $\frac{3}{4}$ of an inch sectional area to each 100 feet of heating surface; and be reduced in proportion as the branch supplies are taken off. The ends of the supply for each house should have a drip of $\frac{3}{4}$ -inch pipe connected to the return pipe below water level of the boiler. The return pipes should be one size smaller than the supply pipe, and dropped below the water level at the nearest point possible. All the heating pipes and returns should fall 1 inch in 10 feet to the boiler. At the end of each coil put an automatic air valve to let the air escape. An apparatus constructed with these rules in view, cannot fail to give the possessor entire satisfaction, and he can safely leave his fire 5 hours in the coldest of weather; and with a saving of 25 per cent. in first cost, and use less fuel than hot water.

These figures are based on practical experience of myself and others in various parts of the country. The sizes of boilers and heating surface will admit of a reduction, 10,000 feet of glass and over, where the houses are built close together.

At some future time, I will give your readers

some facts and figures on steam as a heating agent in heating water in the original plant of hot water pipes.

15th Ave. and Pierce Street, Milwaukee, Wis.

PERPETUAL CARNATIONS — DIANTHUS CARYOPHYLLUS SEMPERFLORENS.

BY JEAN SISLEY.

In the last number of the *Revue Horticole*, February 1st, a very remarkable article was published on the Perpetual Carnations in their present state. But the writer says: "Where and how was the culture of the perpetual carnations commenced? Who is the horticulturist who first did addict himself to it? We do not know."

I therefore think that it may interest American horticulturists and amateurs, to be informed, and I, in consequence, send a copy of their history I published ten years ago in the journal of our horticultural society, which had not a wide circulation.

According to several horticultural writers, the carnation was cultivated more than 2000 years ago; but we know nothing of what was practiced about those times—no more in horticulture than any other science; and as it is only since the beginning of this century that the facts of nature have been studied, we can only relate what has been observed lately.

The perpetual carnations have been created,—created,—at Lyon.

It was M. Dalmais, gardener of M. Lacene, a celebrated amateur and founder of the first horticultural society in Lyon, who obtained the first real constant-blooming carnation, about 46 years ago. He sent it out in 1844, under the name of *Atim*, the produce of artificial fecundation of a so-called species, known by the vulgar names of *Oeillet de Mahon*, or of *St. Martin*, because it was regularly blooming by the middle of November, fecundated by *Oeillet Biohon*.

This first gain was successively fecundated by the Flemish carnations, and about 1846, he obtained a great number of varieties of all colors.

Mr. Schmitt, horticulturist at Lyon, followed M. Dalmais and obtained several fine varieties like *Arc en Ciel*, and *Etoile Polaire*, which were cultivated for several years, but do no more exist, having been superseded by more fine varieties.

But in 1850, a disease having destroyed his collection, Mr. Schmitt abandoned that culture. Soon after, Alphonse Aligatiere, the well-known and zealous propagator, undertook the hybridiza-

tion of carnations, and in a short time obtained a great success, and dotted that series with a great many varieties, all particularly dwarf, and obtained a great improvement by creating those with stiff flower stems, about 1866.

We can thus say that Aligatiere has created a new species.

He has also upset the old system of propagation—that of layering—and has proved that cuttings is the best and most reasonable method, and justified my saying, that layering is the infancy of horticultural art.

Nothing, he has proved, is easier than propagating carnations from cuttings.

The best time to strike them is January and February, and the best mode is to put them in fine sand on bottom heat at about 15° to 20° Centigrades, or 60° to 70° of stupid Fahrenheit, without bell glasses, in a double spanned roof house.

The cuttings must be syringed every day and the sand kept moist; they will be rooted in 3 or 5 weeks, and must be planted out in April or May, and will make fine plants to bloom in autumn; about September they can, those that have flower buds, be potted, for indoor decoration.

Monplaisir, Lyon, February, 1886.

LYCASTE DEPPEI.

BY ALPHA.

Mr. Deppe's *Lycaste*, L. Deppei, is a very desirable epiphytal orchideous plant, having oblong lanceolate bright green leaves, from 18 to 20 inches in length, and which arise from the summit of the pseudo bulbs. Its season of bloom is during the late spring and early summer months, and the flowers are produced on short erect stems. In color, the sepals are green, spotted with purplish red, while the small white petals are spotted and striped with crimson on the inside. The labelum or lip is bright orange, and the column of a creamy white.

This pretty species is a native of New Spain, where it was discovered and introduced into cultivation by Mr. Deppe in 1828, and in whose honor the specific name was bestowed upon it. This *Lycaste* is a plant easily cultivated, requiring during its season of growth, a warm moist atmosphere, with an average temperature of not less than 60°; while during its season of rest it should be kept rather cool and dry. It does best when grown in a basket well filled with fresh sphagnum moss, intermixed with bits of charcoal, and suspended in a partially shaded situation. In

placing the plants in the basket, it is well to keep them a trifle elevated in the centre in order to protect the young shoots from injury by damp.

Propagation is effected by a careful division of the plant, and this should be done just before the plant starts into growth. The flowers of this, as well as many other species of orchids, can be preserved for a considerable length of time, if the plants are placed in a dry cool atmosphere as soon as the flowers are fully expanded, care being taken to moisten the roots occasionally.

ROSE, REINE MARIE HENRIETTE.

BY J. H. SLOCOMBE.

In the Jan. number of GARDENERS' MONTHLY, page 15, "I. H.," Ardmore, Pa., asks how to treat the rose, Reine Marie Henriette, to get it to bloom. This rose requires a rest. If planted in a cold grapery, or a greenhouse cold enough to keep it dormant until February or March, it will then break and bloom abundantly. Should be pruned in the fall. A grand rose for the South, where it can be wintered out of doors. There is nothing of the Glorie de Dijon about it, as advertised when first sent out. For forcing purposes in winter, I believe it to be worthless. *New Haven, Conn.*

CHINESE NARCISSUS.

BY FRANCIS J. HEINL.

In an article in the March number headed "The Sacred Lily of the Chinese," I notice the Chinese Narcissus is spoken of. A Chinaman brought to New York last winter some of these bulbs and presented one to a friend, with the following history: That lily is a very large one; it grows up the Hoang-ho on the rocky, sandy bottoms, and when the water is high and the banks overflow this plant blooms very much. It blooms about the Chinese New Year's day, and we call it

the New Year lily. This bulb was given me in the early winter. It was about 5 inches in diameter, and rather conical. The bulb had grown in sand; was well preserved, and had a decidedly unpleasant odor, but this may have come from its shipmates or associations. I planted it in rich sandy soil, in a 6 inch pot, setting it in a warm, yes, a hot, place, and keeping it rather wet. In thirty-two days after planting the first flower unfolded. The flowers were much larger than a Polyanthus Narcissus, and, if possible, more fragrant. There were, I believe, eight stalks of flowers on this bulb.

Had I known at the time that it was a Narcissus I should have treated it differently, and might have had finer flowers, but not so soon. The flower was not pure white, the cup being yellow, while another bulb, from San Francisco, was grown in water and had a brownish cup. This second bulb was not an inch in diameter. I was struck with the prolific and early blooming qualities of the plant. *Jacksonville, Ills.*

[There are no doubt many varieties of the Narcissus with the Chinese as with us, and some probably very different from our own. As we understand, any variety of the Narcissus is used as their New Year flower. The title is not confined to any one kind.—Ed. G. M.]

EDITORIAL NOTES.

SEED ORNAMENTS.—Ornamental work made of fruits, cones, seed vessels and seeds, is growing in favor, and the business gives employment to large numbers of women and children.

TEA ROSE.—The Bride. Under this name Mr. May is now sending out the pure white sport from Catharine Mermet, flowers of which were on exhibition at the meeting in Philadelphia last fall. It is said to be more productive than its parent.

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

The apple is our standard fruit, and may always be relied on with reasonable care. The first care is good food. Some talk about too rich soil. We never saw the soil too rich for the apple. Where any trouble arises in apple culture, it will be safe

to attribute it to other causes than rich soil. Kitchen ashes, in which table refuse is thrown, is an excellent top-dressing for apples. We like top-dressing better than any other system of manuring apple trees. Even nice ditch scrapings are good to top-dress with where nothing else offers. Apple trees are often starved in other ways than

by neglect to manure. The apple borer leads to starvation oftener than poor soil. The supply of food is cut off by every move the borer makes. They work at the surface of the ground. Look for them now. If you have no time, set the boys and girls to work. Say they shall have no apples for Christmas or birthday presents if they do not. However, get the borers out somehow, if even by wire and jack-knife. If not soon done they will soon get out themselves, and give you more trouble in the future. After they have left, whether by your invitation or otherwise, keep them out; even though you have to lock the door after the horse is stolen. Paper put on in May, and then gas-tarred, will keep them out; some say it will not, but it will. There is no doubt about it. One papering will last three years. The weakening of the tree by the borer is why the fruit drops off in so many cases, and is small and scrubby in others. With these cases attended to there will be little left to worry one but the codling moth. It should however be remembered that the larvæ of the borer live several years in the tree. At the end of the season take the paper off and look for exuding "saw" dust. After getting out the borer cover again. It is because a few missed at first do their work afterwards undisturbed, that the tar paper plan has been thought of little use.

It is very hard, as occasionally noted, to give "seasonable" hints in a magazine going over the world as the GARDENERS' MONTHLY does; as its summer is "seasonable" in some quarters on the same date that it is winter in others; but it may serve the interest of large numbers to note that grafting can be continued till the buds of the trees are nearly pushed into leaf. Sometimes, from a pressure of other work, some valuable scions have been left on hand too late to work. It may be interesting to know, that if such scions are put into the ground, much the same as if they were cuttings, they will keep good for six weeks or two months, by which time the bark will run freely, when the scions may be treated as buds, and will succeed just as well as buds taken from young summer shoots.

In planting dwarf pears, it is very important to have them on a spot that has a moist subsoil, either naturally or made so by subsoiling or mixing some material with the soil that will give out moisture in dry weather. Trees already planted on a dry gravelly subsoil, should have a circle dug out two feet deep, and two or three feet from the tree. This should be filled up with well enriched soil. If the dwarf pear does not grow

freely, it is a sign that something is wrong. It should at once be severely pruned, so as to aid in producing a vigorous growth.

Strawberry beds are very frequently made at this season, and though they will not bear fruit the same year, are much more certain to grow, and will produce a much better crop next year than when left till next August. Though it is a very common recommendation, we do not value a highly manured soil. It should be well trenched or subsoiled: this we consider of great value. In rich soils there is too much danger of having more leaves than fruit. Since, however, the plan introduced by the GARDENERS' MONTHLY some years ago of layering strawberry plants into small pots for transplanting, August and September setting out of new beds has become very popular with amateurs.

A good hint for growing cucumbers, squashes, or similar plants, is to put old sawdust or rotten wood about them. We have not seen it with melons, but it would possibly suit them also, and those who have never tried cucumbers on strong bushy stakes like pea sticks will be surprised to note how they enjoy it, and tomatoes do better trained to stout stakes than any other way.

Speaking of rotten wood reminds us that the raspberry, gooseberry and currant also enjoy it, the currant especially.

For leaf-producing vegetables, such as cabbage, celery, lettuce, nothing suits like soap-suds, or the draining of a barn yard. These hints are of course for amateurs who love superior products. They are scarcely applicable on a large scale.

COMMUNICATIONS.

PEACHES IN FLORIDA.

BY DR. J. C. NEAL.

Our section is peculiar as regards fruit. The peach, apple, etc., from the North either do not grow, or become demoralized in some way. Northern peaches do not bloom till May, then drop their fruit. The Spanish or native Southern kinds bloom in February and mature during our rainy season, in July and August. The recently introduced Chinese crooked and flat varieties bloom in January and mature in May but are liable to short crops from the frosts of January, and February 1st to 20th, besides, both are very small.

We have two native varieties that are of fine size, color and flavor, but they bloom from February 15th to March 10th, and ripen August 1st to 15th, both "freestones." The Chinese Flat Peen-to is a

cling. Now, a hybrid ripening in May, a Peen-to-flat peach—freestone, or a "Crooked" cling hybrid would be great acquisitions, as well as a hybrid between the "Indian Blood cling" and the Chinese varieties. During the last ten years I have made many experiments, and planted many peach seeds, but as yet to no purpose. I am led almost to conclude that the peach is self-fertilized, neither Protero-androus or gynous. I have not been able to find any authority in botany who knows more about hybridization than yourself, and with this preface and excuse I will ask: How shall I determine if the peach is Proterogynous or not—Proterandrous? What is your belief or knowledge as to the class referred to of the peach? Is there any difference in the ripening of the pollen in cling or freestone? Given a cling mother—Chinese Flat—and a freestone father—Crooked or Amelia—which will the hybrid resemble? Would a blood freestone from native freestone and blood cling, or from honey freestone and blood cling? Which would I better use as the female element? Is there any law governing? Is there any treatise on the subject?

Archer, Florida.

[Whether the pistils mature before the stamens (proterogynous) or the stamens before the pistils (proterandrous) is solely a matter of climate or season, and is not a definite character of the plant itself. This we think has been proved by the writer of this in the "Proceedings of the Academy of Natural Sciences of Philadelphia," though we do not know that the fact has been recognized by European botanists; certainly by none who have written about the fertilization of flowers. A stamen is excited to growth by a few warm days, while it takes a regularly warm "spell" to start the pistil. This is the reason why we often fail in getting crops of hickories, walnuts, filberts and other things when there are a few warm days in winter. The stamens mature long before the pistils push. Hence, when they do there is no pollen to fertilize them. In the usual seasons, they both push together, or the flowers may be proterogynous.

There is no rule for the influence of either parent. The same plant to-day may show a large proportion leaning toward the male parent. Seeds of the same cross next year may have opposite results.—Ed. G. M.]

PICKLING CORN.

BY MRS. J. S. R. THOMSON.

I notice editorial remark below notice of M. M. Wilmorin's work, "The Vegetable Garden," about the American treatment of Indian corn: "Possi-

bly they are so treated, but I have not so seen, and it must be very local." I know of no section but this; but here it is one of our most prized and used vegetables next to cucumbers and young musk-melons (here called "Mangoes") for ajax pickling. We plant purposely pop-corn to obtain perfect miniature ears, which, culled as soon as grains are formed and before they begin to harden, are toothsome indeed.

Spartanburg, S. C.

ASTRINGENCY OF PEARS.

BY J. G. R. KALB.

My soil, or rather subsoil, is a very compact yellow clay and of course the surface soil has much of the clay in it. Some years before the war I had the Glout Morceau pear on quince to come into bearing. The first few years the fruit showed considerable astringency. I think I found a single well-developed specimen in the years I let the trees stand, to be free enough of astringency to make it barely palatable, and I am not at all opposed to a little astringency.

I had to move or destroy those trees as they proved to be in the way. But in the meantime I had some standards coming on in what I thought rather better ground, but the fruit on them proved to be, if possible, more astringent than the former. They soon, however, died of blight, and I have none of it since and have left that variety out of nursery and orchard. In both plats of ground and at the same time of the Glout Morceau's existence and bearing I had the Louise Bonne under the same circumstances of treatment, etc. For a few years, say three or four at most, the Louise Bonne was fairly free of astringency, but it then became rough and astringent so as to be almost worthless. On the standards they were rather slow bearing and the roots got down I presume in the clay; at any rate there has been no real fine flavor about them, though the fruit was larger and prettier than on the dwarfs. I find the Duchess, too, more coarse (and astringent at times) than I see and taste them from other places.

This matter of astringency in pears I read in Mr. A. J. Downing's book, while he was yet alive, and as it proved so suited to my experience I set it down as one of the unerring facts, and have tried so to teach others.

Lovettsville, Va.

[This is an additional evidence in favor of Mr. Downing's view, that clay or heavy soil favors astringency. It is yet worth while discovering in what way clay soil acts on inducing astringency. If the Glout Morceau, Louise Bonne or other pears

known to have this defect, produce fruit in heavy soil free from this annoyance, the fact would be worth recording, as it is by exceptions that we often learn to account for the rule.—Ed. G. M.]

COAL DUST AS MANURE.

BY WM. T. HARDING.

In the February number of the MONTHLY Mr. J. A. Price, Scranton, Pa., says "he believes that coal dust will make an excellent fertilizer." And so do I. General as the belief has previously been that coal dust and coal ashes was worthless rubbish, and of no possible good in the garden or field where vegetables are cultivated, and would be better hauled away to fill up an unsightly hole somewhere or repair the roads with, seems at last has been proved a common error.

Of course it was admitted that its mechanical action only upon heavy clayey soils might be as beneficial as so much coarse river sand would be, yet it was very doubtful if it possessed any other value. And I doubt that for many years I entertained a similar opinion, and would have willingly allowed anyone to have removed it as a nuisance glad to get rid of. Although we may long remain mistaken about many matters, sooner or later "time discloses all things," and even the virtue of coal dust and ashes has at last been discovered, and through the pages of this magazine made known to all good men.

Late experiments have proved to me that either on light friable loam or sandy land, even as sandy as much of New Jersey soil is, it is one of the best fertilizers I ever used. Wherever it was freely applied, either in the vegetable or flower garden, its beneficial effects were remarkable. Carrots, turnips and parsnips seemed to delight in it; while peas, beans, salsify and beets appeared to glory in it; and for such like things as potatoes, onions and tomatoes, why they, like "Pardee's pig, grew fat and big" among it. And, talk of the flowers, that tasted it, oh, "such beauties they did grow," and did indeed "astonish the Browns" when passing by.

Mount Holly, N. J.

THRIP AND OTHER GRAPEVINE INSECTS.

BY MR. DUNCAN RHIND.

"Cultivator" (page 78) recommends the Meadville correspondent to use sulphur fumes in doses strong enough to kill thrip. If he does he will surely come to grief, as others have done before him. This pest cannot be dealt with like mildew

or red spider. Such mild doses as would be quite effectual for the one would have little or no effect on the other. It may be possible we are not contending with thrip. I am inclined to believe we have the winged variety of the phylloxera, and if it should be so, we have yet to find out a successful remedy. There are five or six cold or heated graperies here in Torresdale—probably the largest house in the country is on the old Harrison place, two hundred and fifty feet long, double span—and all have had considerable trouble with the thrip so-called. Several had their crop of fruit ruined. The foliage all fell off before the fruit was colored, and of course the fruit was worthless, and I presume the vines are considerably crippled. I have succeeded in ripening the wood and saving the crop of those in my charge. The house is less than a hundred feet long, but very high. I was told it was full of thrip, and had prepared accordingly by removing all loose bark, giving the vines and house a good scrubbing with whale oil soap. Still, they soon appeared by the thousand, but I kept them in check by hellebore, dissolved in water, applied by the syringe. It will destroy them till they get to the second moult, after which it does not seem to have any effect. The application of hellebore must be discontinued two or three weeks before the fruit begins to color, so as to have it all washed off by the syringing.

I also used tobacco smoke, but it does not kill the full grown insect, probably not the smallest either, even when applied strong enough to injure the foliage, but it stupefies them so that they drop down. Then I open doors and ventilators, and turn on the hose, wash them from the lower limbs, and rake them into the soil. One of my friends says he takes the broom and brushes them to death. However, syringing has to be discontinued when the fruit begins to color. So must tobacco smoke be seldom applied after this stage, as the fruit will taste of it. Then what?

My plan for this summer's campaign is somewhat different. I give it, hoping others will try it who know of no better. Vines thoroughly cleaned as before. When pruned, a dressing applied to prevent bleeding; painted them with a mixture of whale oil soap, sulphur, tobacco juice, yellow clay, and soot to color; add water enough to make a thick paint. House painted both inside and out. Also a quantity of manure dug into borders. Inside borders to be covered with tobacco stems.

The vines are now covered with straw and mats to keep them from the sun; as they are thirty-five

years old, and stout in proportion, and cannot be bent down and covered with soil, which is by far the best way. Ventilators are opened every morning and closed at night.

I do not think A. H.'s wire cup and kerosene has anything to commend it, as the thrip begins on the lower leaves and works upwards; often the lower leaves are dry as tissue paper when the vine is green at top. Where can I send specimens of insects to be identified? *Torresdale, Pa.*

[Prof. C. V. Riley, Department of Agriculture, Washington, D. C., will always be glad to receive any insect that may be sent to him.

In the use of sulphur it is dangerous to use the word "fumes," as many persons will understand this as meaning that the sulphur must be ignited as we produce the "fumes" of tobacco. This would destroy all plant life as well as the insects. But the sulphur placed under hot sun, or on pipes or flues, and so warmed to a degree less than ignition, gives off a vapor that insects do not like, without being injurious to vegetation.

It is well to remember that there are two classes of insects which the gardener has to deal with; those which eat, and those which simply suck the juices of plants. Poisons like hellebore, or Paris green are of no use to the sucking class like the green fly, as they bore through the tissue, suck the juices and thus escape. Potato beetles, caterpillars and the like, that feed on the foliage, of course eat the poison also. The sucking insects are usually reached through their breathing apparatus, and it is here that the vapor of sulphur, or the fumes of tobacco prove useful aids to us. But in the case of the thrip, which falls to the ground as soon as it smells tobacco, these remedies are of little account. Cleaning off the rough bark, and washing as recommended by our correspondent, is excellent, as destroying large numbers of eggs.—Ed. G. M.]

EDITORIAL NOTES.

FORCED FRUITS AND VEGETABLES.—On the 1st of February a reporter of a Philadelphia paper found strawberries, of the Sharpless variety, grown in a Wilmington, Delaware, hot-house, bring \$7 per quart. They are also received from New York State. Ordinary-sized cucumbers, from the Continental Hotel farm, raised in hot-beds, sell for 75 cents each. For New Jersey hot-house peaches of not unusual size, the sum of \$1.50 each is asked. The sales of these are said to be slow. Continental Hotel hot-house asparagus is also on sale at 50

cents per bunch. A Wilmington, Del., hot-house also furnishes ripe tomatoes, for which 80 cents per pound is asked. Winter hot-house grapes, it is said, are about gone, and the spring production will not be here until May. City-grown mushrooms are also on sale at 75 cents per quart.

REMEDY FOR VINE MILDEW.—The Proceedings of the Agricultural Society of Bouches on the Rhine says that in cases of vine disease—mildew we suppose—where sulphur was ineffectual the following was quite effective: "He therefore mixed five hundred grammes of sulphur sublimate with two hundred and fifty grammes of burnt lime, and two hundred and fifty grammes of carbonate of sulphur, applying the mixture as far as possible to the under side of the leaf."

WINTER NELIS PEAR.—This variety does not prove a profitable pear generally in California, and some orchardists are grafting their trees with *Beurre Clairgeau*.

SCRAPS AND QUERIES.

FROST AND PEACH TREES.—"Juvenal" writes: "I have recently become a subscriber to the GARDENERS' MONTHLY, and am much pleased with the intelligent manner in which all questions are discussed, sometimes in a light wholly different from that which I have been accustomed to in other periodicals. I am surprised that so many views, the opposite of which I have held, so easily carry conviction with them. But I must crave pardon for asking more light on some things. At least on one, the destruction of peach buds; you say it is not the absolute degree of cold as marked by the thermometer that kills them. In this section we have been taught that 10° below zero is the destruction point. It seems reasonable to me that there should be a fixed degree for identical phenomena. We say that water freezes at 32°. But we would not say it sometimes freezes at 30°, sometimes at 20°,—'according to circumstances'—why then should there be any variation in the degree at which a peach bud should be killed?"

[It would take a long story to give our correspondent the reply he ought to have. We can only say the facts show that there is no definite point of the thermometer at which a plant parts with life. For instance, frost gets in the greenhouse. The gardener shades the house and syringes freely with water, and the plants recover. If he had not done so they would have died from frost. Again, in the moist atmosphere of England broad-

leaved evergreens will live through the winter at a much lower temperature than in the eastern part of the United States. Again, a potato or turnip frozen in darkness will not rot as soon as one frozen in light, and the evergreen or European Ivy will endure a low temperature on the north side of a wall, while it dies on the higher temperature of the south side.

In brief, we come to look chiefly to transpiration and not to mere temperature for the losses in vegetable life. We know that plants transpire more freely in light than in darkness, in a bright sunny day than in one that is cloudy. Temperature of course influences transpiration, but we see that there are other agencies that may aid or obstruct temperature in its work.

Our correspondent in his illustration of water always freezing at 32° makes the same mistake that even eminent teachers make, in looking on vital action as a mere physical question. A log of wood or a fence rail, alongside of a bed of yuccas or other broad-leaved living plants, will "steam" profusely under a burst of sunshine on

a spring day. The log will feel warm. But there will be no vapor seen from the leaves and they will feel cool. But a lot of dead leaves will "steam" as well as the piece of wood. Again, on a hot summer day a dead log will feel quite warm, a living trunk cool. We see from these and many similar illustrations that physical laws as they relate to inanimate nature do not operate the same way when dealing with things of life. To make some distinction, we call the loss of moisture when it is the effect of vital action, transpiration. We call the mere physical abstraction of moisture, evaporation. In matter deprived of life only the latter operates; in living things both evaporation and transpiration are at work.—Ed. G. M.]

PICKLED INDIAN CORN.—"Mrs. E. J. D., "Nicholasville, Ky., writes: "Hundreds of small ears of Indian corn are given a 'vinegar bath' each year in this region. The ears are pulled for this purpose when about two or three inches long, exclusive of the husk. If you are fond of pickles I would advise you to try Indian corn this summer."

FORESTRY.

COMMUNICATIONS.

SOME TREE MEASUREMENTS.

BY S.

I have been much interested in the occasional notes on tree growth, which you give in the MONTHLY. And I send the following measurements to show the growth of trees planted in rich soil and in private grounds. The locality is on the farm of Isaac G. Smock, near Holmdel, Monmouth County, New Jersey. The trees stand among many others at wide spaces apart about the residence and in grass, as the grounds have not been ploughed in a half century. I cannot give the exact age as they were set out at intervals shortly after 1859. None of them can be more than 32 years old; and some of them are not yet 30 years from the seed. I think that 30 years would be the average age. The trees selected for measurement were the more thrifty, although not much larger than others of the same species in the grounds. The measurements were made 2 to 3 feet above the ground; and give the circumference of the trunk

at that height. The height is not given as it is not extraordinary in consequence of their spreading out in showy tops rather than in stretching up, as in closely planted groves.

Maple, <i>Acer rubrum</i>	71 inches
Sugar Maple, <i>Acer Saccharinum</i>	41 "
American Elm, <i>Ulmus Americana</i>	60 "
Tulip tree, <i>Liriodendron tulipifera</i>	63 "
Sweet Gum, <i>Liquidambar styraciflua</i>	46 "
Linden, <i>Tilia Americana</i>	43 "
Black Cherry, <i>Prunus serotina</i>	52 "
Locust, <i>Robinia pseudo-acacia</i>	48 "
Kentucky Coffee tree, <i>Gymnocladus Canadensis</i>	43 "
Weeping Will w, <i>Salix Babylonia</i>	48 "
Deciduous Cypress, <i>Taxodium distichum</i>	60 "
American Larch, <i>Larix Americana</i>	42 "
Balsam Fir, <i>Abies balsamea</i>	58 "

Albany, N. Y.

[Our forestry readers will thank S. for these valuable figures. We should be glad to have others. American forestry, now passing from infancy to vigorous youth, will take all such pleasures as friends can give them. And we can learn from this communication how necessary it is to have numerous figures, in order to strike an average as a practical guide. For instance, rapid grower as the Red maple usually is, it is something remarkable to have it outstrip the willow. Indeed, the willow is so far behind, that it leads

to another thought of importance in forestry figures, namely, the importance of individual strength of the tree taken for comparison. All who have had experience in tree raising, know that there is constitutional character in individual trees that affects their growth. Indeed, some always remain nothing but dwarfs, and, when selected by the nurseryman, furnish the "Tom Thumbs," "Little Gems," and other miniature pets of his catalogue. In some instances, extraordinary individuals will appear, and possibly here the Red maple may have been of extra constitutional vigor, while the willow was below.

Again, as trees are often very nice in their gastronomic tastes, an individual will, once in a while, find itself in "clover;" while another, if it had the power of thought, would envy the swine husks that gave a thankful meal to the Prodigal Son.

There are so many of these side issues in gathering facts for a good chapter on comparative tree growth, that we cannot have too many figures.—Ed. G. M.]

EDITORIAL NOTES.

ABIES PUNGENS.—In the early explorations of the western part of our continent, a pretty spruce was discovered and named *Abies Menziesii*. Subsequently a species was found in the Rocky Mountains, supposed to be the same. Cultivators found the trees of different values.

The Pacific form would not stand the dry

atmosphere of the Atlantic States, and dried out in winter when there were keen cutting winds much below the freezing point. Mr. Douglas discovered that the Rocky Mountain form was able to endure the roughest eastern winter; and though the tree is too short, and too slow to be of much use for forestry purposes in comparison with the western one, it was every way preferable by the cultivator of ornamental trees. Botanists

came to look on the tree as somewhat distinct, and it obtained the name of *Abies Menziesii* Parryana in many quarters, through Dr. C. C. Parry having been the first to introduce the seeds to lovers of pretty trees.

Finally botanists went further, regarded the tree as distinct enough to have a name of its own, and Dr. Engelman made it *Abies pungens*; the pungent or sharp spruce. The leaves are very stiff and sharp-pointed, and the short bases of the leaf-stalks on the older branches make one look sharp enough when handling it. The name is, therefore, appropriate, and yet in some sense unfortunate, as



Abies pungens.

there is already a *Pinus pungens*, so named from its very prickly large cone, and some botanists see no great difference between a spruce and a pine. Still, *Abies pungens* is now the name of the Rocky Mountain Blue or White spruce. Some plants are much more gray or blue than others, and Dr. Regel of St. Petersburg is inclined to make still another species out of the very blue form.

Cultivators will, we suppose, continue to call the plant, Rocky Mountain Blue spruce, whatever

conclusions botanists may finally conclude its scientific name ought to be.

We believe the finest specimens along the Atlantic sea-board are near Boston, and the Editor has seen some very superior ones on the grounds of Prof. Sargent, at Brookline. These are all from seed collected by Dr. C. C. Parry in 1860, and by some mistake were labelled for some time *A. Engelmanni*. There is one in a Germantown garden, presented by Prof. Sargent some years ago, which is 10 feet high, and beautifully proportionate. The Boston plants are probably better than that. But the best perhaps in cultivation is the one on the grounds of Mr. Asa Whitney, Franklin Grove, Illinois—the tree brought from the Rocky Mountains. The exact height we have not at this writing, but it is near 25 feet high. The accompanying illustration we have made from a photograph sent to us by Mr. Whitney. When it becomes better known, it will be as much sought for in Eastern gardens as the Norway spruce or White pine. We place it among our arboricultural chapters, because it is as yet chiefly known as a forest tree by Colorado travellers.

QUERCUS PANNONICA.—The *Garden* says of this oak:

"This is truly a noble oak, with handsome incised leaves, and one of the quickest growing oaks in cultivation. The wood is said to be very enduring and valuable. The timber has been used in old mines in Hungary for centuries, and without showing decay; as compared with our own oaks, its growth when young is as two to one. There is also a good specimen in the Edinburgh Botanic Gardens. It is also known as *Q. conferta*."

We have seen this in America, and find also that it is a very healthy and rapid grower, as in the old world.

PLANTING NEW FORESTS.—At the meeting of the New York Horticultural Society, Mr. Barry took sides against so much public effort to preserve the old forests and said: "I believe with Mr. Meehan of the *GARDENERS' MONTHLY*, that the right thing to do for both State societies and individuals is to encourage planting. We have in our own State thousands of acres that might be profitably planted with timber trees, and every farmer having such land will do well to plant a few hundred or thousand trees every year."

SCRAPS AND QUERIES.

THE LONG LEAVED PINE OF NEBRASKA.—Mr. S. B. Higgins, Gordon, Nebraska, writes: "Since writing you at the time specimens were

sent, I have been investigating this more fully. I have seen seeds, cones, twigs (with leaves thereon) and wood of the simon pure genuine *Pinus ponderosa*, and with all due respect to friend Meehan and others, who have expressed their opinions, I am now humoring myself that the pine in question, is removed so distantly in form, habit and habitat from *P. ponderosa* as to be an entirely different species. Now, don't you be angry with me for setting my opinion up against yours, for I am not prepared to do that yet, and do not know as I will in the future, inasmuch as you are the only person who comes anywhere near agreeing with me; for all others to whom I submitted it, have pronounced it *P. ponderosa* positively, and pure and simple. Even Robt. Douglas pronounced it *P. ponderosa*, in the face of the fact (as I understand it) that he has grown *P. ponderosa* largely from the seed, and perhaps has them at the present growing either on his grounds or in nursery.

"It is many years since I have seen a specimen of the *Pinus mitis*, or Yellow pine, as we called it in the East, but so far as recollection serves me, the tree in question reminds me more of Yellow pine than it does of *P. ponderosa*."

"Sorry to trouble you with this matter, and should not have done so, except for the fact that you kindly furnished me with your opinion thereon, and a man in pursuit of knowledge under difficulties, has to make use of all available resources."

[The pine is not *Pinus mitis*. We have to confess that the long sheaths at the base of the bundles of leaves, the small cones and deflexed prickles, are much more like the Eastern form of *Pinus tæda*, the long-leaved pine of the South, than like the Pacific form of *Pinus ponderosa*. But we decided in favor of its being *P. scopulorum*, principally because this very question of the relation of the Long-leaved pine to the Rocky Mountain plant, has been examined by Engelmann and other competent botanists, and pronounced against. It would hardly be conceded by them, that *Pinus tæda* could be found so far North.

But on the other hand we have to admit, that the character, on which many species of pines are made are so slight, that in other genera botanists themselves would hardly admit them to be of sufficient importance to found a species on.

In this case, if the specimen had been sent to us—a cone and branch merely as these were—from the South instead of Western Nebraska, we should have considered it a form of *Pinus tæda*.—Ed. G. M.]

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

ZEPHYRANTHES.

BY H. NEHLING.

Making the collecting of Amaryllidaceæ a specialty, I obtained also a few yellow flowering species of *Zephyranthes*. Of this genus I have the following species:

Zephyranthes Atamasco and *Z. Treatie*.—Both natives of the south-eastern portion of our country. There is, however, no great difference between these two species.

Z. candida.—From Buenos Ayres. Very beautiful white, similar to a white *Crocus*. Leaves are thick, somewhat rounded, dark green. Blooms the whole summer.

Z. tubispatha.—From Mexico. White, large flowers.

Z. rosea.—Native of the West Indies. Flowers rosy red; all the summer.

Z. carinata.—South America. Beautiful white and red. Larger flowers than the other species.

Z. ochroleuca.—Beautiful orange colored species.

Z. sulphurea.—Sulphur yellow flowers. Very beautiful. There are others which I could not yet obtain, such as *Z. verecunda* and *Z. mesochloa*.

Z. citrina—is another yellow species. I find the following description in "Botanical Magazine, 6605:" "Bulb globose. Leaves, three or four; developed in autumn simultaneously with the flower; narrow linear, bright green, about a foot long. Scape apiculate, 4 or 5 inches long, green, tinged with red-brown towards the base. Spathe short, tubular. Pedicel under an inch long. Ovary oblong, trigonous, green; perianth with a funnel-shaped tube above the ovary, a third or half an inch long, and a bright yellow limb an inch and a half long of six oblong subacute connivent segments under half an inch broad. Stamens, same color as the perianth limb; filaments under an inch long, erect and equal; anthers linear, half an inch long, their tips falling considerably short of the tips of the perianth segments. Style about an inch long, with a stigma of three rounded lobes."

There seems to be much confusion among the species of this genus. It would be a very good

work for Mr. Baker, of the Kew Gardens, London, or any other botanist making the study of bulbous plants a specialty, to give us a monograph of the family Amaryllidaceæ. *Freistatt, Mo.*

THE BAG-WORM, AND THE ELM-LEAF BEETLE.

BY PROF. S. S. RATHVON.

I notice on page 7 in the January number of the GARDENER'S MONTHLY, that some of your correspondents still indulge in chronic complaints about the two noxious insects I have named above, and of course, they complain because they are afflicted. Now this ought not to be, especially so far as the matter relates to the insect first named—the "Bag-worm." In the whole catalogue of noxious insects I do not know of one that is more accessible, more conspicuous or easier managed than the one just named. It does not make the least attempt to escape, and could not if it would. At the least interruption it immediately withdraws itself within its case, and unresistingly submits itself to whatever fate may be impending; and, if it escapes final detection, it must be from a want of human vigilance; and my main object in writing this, is, to admonish all sufferers from the defoliation of the Bag-worm, or whatever other name it may be known by, that now is the proper time to destroy it—now—when all trees except evergreens are leafless, and these enemies in embryo, ensconced in their spindle-shaped follicle, are so conspicuously dangling from their branches. As you intimate in your reply the war against marauders should be general and simultaneous. It is true that on the Arbor Vitæ they are not so visible as they are on trees or shrubbery that shed their leaves; but, if the matter is attended to from now on to the middle of April, or even the first of May, a united and vigilant effort must succeed. The leaves of evergreens which form the outer clothing of their follicles become discolored as spring approaches, and these faded masses are in positive contrast with the living green of the trees, pointing out just where these stealthy enemies are located. Although the larger number of these follicles are the deserted habitaculi of the males of last season, yet not one of them should be allowed to remain. The pupa-shell of the female remains

in the case all winter, and this shell is filled from top to bottom with eggs—300 to 500 in number—nicely packed in short silky fibers that she rubbed from the hind end of her body in the process of oviposition; and no amount of cold can affect them, nor can the least moisture reach them, or any bird dislodge them.

It is easily seen then, that if a single follicle, so charged with eggs, is overlooked, enough of the worms will be evolved to inoculate a very large tree, or a pretty long *Arbor Vitæ* hedge. True, they are subject to adroit insect parasites—several species of them—and no doubt many are destroyed from this cause; still, they are so completely protected, that they are better able to elude the attacks of their parasitic enemies, than the naked caterpillars which have no protection.

On one or two occasions I have observed the exclusion of the young bag-worms from the eggs, and it was to me an interesting sight. On one of these occasions the metamorphosis took place in my sanctum. I had two follicles hanging on a nail in the wall all winter, one of which was that of a female. The room was kept warm, and of course, the evolution was premature, occurring in April. The young emerged from the mouth, or lower and open end of the bag, one or two at a time, each one spinning his own silken cord. They were very lively, "paying" out the cord with great alacrity. Wherever, or upon whatever they happened to alight, there they soon began to construct their habitaculi. Some of them alighted on the wall and these constructed their small cone-shaped houses out of scales of whitewash; some fell upon the leather cover of a book, and these appropriated small scales of leather, whilst others fell to the floor, and for the same purpose appropriated small scales of a rush carpet that covered the floor. These juvenile follicles are not spindle-shaped, but cone-shaped and stand erect; it is only after the inmates become eight or ten days old that they become pendant. On the 26th of May I hung a single follicle on a quince tree, and on the same day they came tumbling out in rapid succession, to the number of one hundred or more, when I destroyed the remainder by throwing them into the fire; in less than half a day none could be discovered; but on the branches, and under sides of the leaves, their little erect cones projected like so many small spurs, and if I had not known that they were there, I probably would have overlooked them altogether. It, therefore, is important that the follicles should be destroyed before the young reach that period of their development. Let

silviculturists and horticulturists "stick a pin there."

Although these insects seem to have a preference for the *Arbor Vitæ*—at least in some localities—yet I have found them much more destructive to a few other trees, especially the linden and the silver maple. It would be hard to say what tree they do not attack, except perhaps the peach. But in addition to the various species of conifera, I have observed them in great abundance on locust, linden, maple, cherry, plum, apricot and apple; also on the roses, quinces, lilacs, walnuts, chestnuts, oaks and others. I think the largest number I ever saw together in one place, was in a small locust grove in York county, about forty years ago.

My attention was called to them here in Lancaster, in the summer of 1849, by a gentleman who had a fine apricot tree, the leaves of which became as crisp as if they had been scorched, about the end of August, for several seasons, every year becoming worse, and he could not divine the cause. I called his attention to the fact that those shriveled bunches of leaves were on the move from one twig to another in search of fresh pasture. After he knew the cause, it was not long before he gathered and made a general roast of them, after which his trees fully recuperated again.

I know no effectual remedy but hand-picking, and with a pair of garden shears attached to a long pole, and worked with a cord, a pretty large tree can be entirely cleaned.

It is rather to be regretted that this insect has been endowed with such a long scientific name, *Thyridopteryx ephemeriformis*, but that cannot now be helped. I devoted three or four seasons to its special history, and followed it in all its transformations from the egg to larva, pupa, imago and to the egg again; and in 1854, under the name of *Oiketicus pennsylvanicus*, I published my paper in the *Pennsylvania Farm Journal*, then published at West Chester, Pennsylvania, but I was too late. My name was superseded by Dr. Harris, who named it *Oiketicus coniferum*, from specimens sent to him from Virginia, although I believe he had never bred it; but, it appears that Dr. H. subsequently referred it to Stephens' genus, *Thyridopteryx*, and changed the specific name, as above.

It has an interesting and remarkable history, but I have neither time nor space to repeat it here. I think I must have known it half a dozen years before I saw it on a coniferous tree.

Lancaster, Feb. 16th, 1886.

VEGETABLE MILK.

BY REV. L. J. TEMPLIN.

Every one is acquainted with certain plants that secrete a milky fluid in peculiar ducts known as "milk ducts." The lettuce, silk-weed and sumach may be mentioned as well-known illustrations. In tropical countries there are numerous trees that secrete a milky substance, which, however, differs very widely in its properties in the different species of trees that produce it. From some kinds the milky juice is bitter, nauseous and poisonous; but in others it is very pleasant and agreeable to the taste, and very nutritious as an article of diet. Among this class is found the Cow Tree. This tree flourishes in Central and South America. It is known by the name, *Palo de Vaca*, to the inhabitants, but to botanists it is *Brosimum galactodendron*, and is a member of the fig family. This tree is said to grow on the surface of the rocks, sending its roots downwards with great difficulty. Its leaves are rather thick and fibrous, having a dry bark-like appearance. For many months of the year no showers fall upon it and its branches look dead and withered. But when the bark is pierced there is a copious flow of sweet, nourishing milk. This is used extensively by the natives as a drink diet, and it is said they become visibly fatter during the season of its most copious flow. The flow of the liquid is most abundant at sunrise, at which time the natives flock to the forests of cow trees, carrying their pitchers to receive the supply of milk. Some drink it on the spot, while others carry it away to their homes.

When left standing in the open air, a thin, tough skin is formed on the surface, and as this is taken off it continues to form for a considerable time. This may be kept and used as a cheese, for a week or more. When placed over a fire a scum of cream forms on the surface, which if removed and the heat is kept up steadily, the milk gradually thickens to a paste; then oily rings form on the surface, similar to those that are seen on cream that has been for some time over the fire. Finally this fat portion envelops the whole mass, which then exhales an odor precisely similar to that from roast beef. Boussingault visited the region where this tree is found and gives the following account of the results of a careful examination of the milk. In order that its resemblance to cow's milk may be the more readily understood, he gives a comparison of the milk of the cow tree with the cow's cream. He finds the vegetable milk to contain: "1st, a fatty substance resem-

bling wax, fusible at 50° C., which represents the butter of natural milk. 2d, a nitrogenized substance very much analogous to cheese. 3d, saccharine substances. 4th, salts of potassium, sodium and magnesium, together with phosphates." The following gives his comparison of the animal and vegetable products:

Cow Tree Milk.	Cow's Cream.
Wax or fat.....35.2	Butter.....4.33
Saccharine matter.....2.8	Sugar of milk.....4.00
Caseine, albumen.....1.7	Caseine and phosphates. 3.5
Mineral, etc., matter.....2.3	Water.....58.2
Water.....58.0	

When the milk of the cow tree is kept in a closed vessel for two months it separates into two parts; one, a light yellow liquid with a slightly sour odor; the other, a solid, white and insipid, and that is insoluble in either water or alcohol. This is the fat or wax found so abundantly in the milk. This substance burns with a brilliant green flame. This tree is found in Brazil, where it is sometimes called *Galactodendron dulce*, under the mistaken idea that it is a different tree from the one described above. Another, *G. clusia*, found in that country, furnishes a milk quite agreeable to the taste, but it is quite inferior to that already named, as it is difficult to purify it, and instead of wax it contains an unpleasant resinous substance. Other trees furnish milk that is poisonous; but of these I do not propose to speak at present.

Canon City, Col.

EDITORIAL NOTES.

HAWKS AND OWLS.—The Pennsylvania legislature, which a few years ago enacted that forestry should be encouraged by allowing a man not to pay for the repairs to the highways, provided he would plant a few trees along the roadside fence, has again distinguished itself by enacting that counties shall pay fifty cents for every owl or hawk destroyed. Since that act was passed, one year ago (June, 1885), Chester county has had to pay for ninety hawks and twelve owls, \$75. The Chester county people are protesting against the stupid slaughter. Prof. Merriam, the ornithologist of the United States Department of Agriculture, expresses himself freely about the absurdity of this law.

"The possibility of the passage of such an act by any legislative body, is a melancholy comment on the wide-spread ignorance that prevails even among intelligent persons, concerning the food of our common birds and mammals, and is an evidence of the urgent need of just such systematic and comprehensive investigations as this

department is now making on the subject of the relation of food habits to agriculture.

"Of hawks and owls collectively, it may safely be said that, except in rare instances, the loss they occasion by the destruction of poultry, is insignificant in comparison with the benefits derived by the farmer and fruit grower from their constant vigilance; for when unmolested, the one guards his crop by day and the other by night."

As to the real food of hawks, Mr. B. Harry Warren, of West Chester, made the following report in 1883 to the Pennsylvania State Board of Agriculture:

"*The Red-tailed Hawk* (*Buteo borealis*).—My examination of one hundred and two birds of this species, revealed in eighty-one chiefly mice and small quadrupeds, also some few small birds; nine, chickens; three, quail; two, rabbits; one, ham-skin; one, a part of a skunk; one, a red squirrel; one, a gray squirrel; three, snakes.

"*The Red-Shouldered Hawk* (*Buteo lineatus*).—Of thirty-six examinations which I have made of this species, twenty-three showed mice and small quadrupeds, grasshoppers and coleopterous insects; nine revealed frogs and some few insects; in two, snakes and portions of frogs were present; and from the remaining two small birds, particles of hair and a few orthopterous insects were taken.

"*Broad-Winged Hawk* (*Buteo Pennsylvanicus*).—In twelve specimens examined by myself, four revealed mice; three, small birds; four, frogs; one, killed the 22d of May this present year, 1882, was gorged with cray-fish, with which were traces of coleopterous insects.

"*The Sparrow Hawk* (*Falco Sparverius*).—The stomach contents of twenty-nine of this species, which I have dissected, showed in fifteen, principally mice, with frequent traces of various insects; six, grasshoppers; two, coleoptera and grasshoppers; two, meadow larks; four, small birds—sparrows.

"*Cooper's Hawk* (*Accipiter Cooperi*).—Of twenty-seven birds which I have examined, fourteen showed the food taken to have been chickens; five revealed small birds—sparrows and warblers—*Dendroica*—two, quail; one, bull-frogs; three, mice and insects; two, hair and other remains of small quadrupeds.

"*Sharp-Shinned Hawk* (*Accipiter fuscus*).—I have dissected fifteen of these falcons. Six of this number showed small birds; three, quail; one, mice; four, remains of young chickens; one, grasshoppers and beetles.

"*The Rough-legged Falcon* (*Archibuteo lagopus*, *Sancti-johannes*).—Nine birds all showed their food to be exclusively field mice.

"*The Marsh Hawk* (*Circus cyaneus* *Hudsonius*).—Of eleven birds examined, five revealed mice; two, small birds—*Dendroica*—three, frogs; one, a large number of grasshoppers, with a small quantity of hair, evidently that of a young rabbit."

It is evident that it is no "sickly sentiment" that induces the protest against the Pennsylvania

law, for the figures show the numbers slaughtered in the interests of science have been large.

ORIGIN OF VARIETIES.—We recently came across the following piece of manuscript written many years ago by the Editor and misplaced. It is true enough to appear yet; and it also shows that one may "live and learn;" for if written in these latter times, the position that hybrids are not necessarily sterile would be much more strongly stated:

"It is well known that in a wild state the common blackberry varies so much, that no two botanists can agree as to what is a species. Some make hundred, while others but a very few, and class the species of the other botanists as simply varieties of species. There has seemed to be no way out of this trouble, as all parties assume that there ought to be definite species somewhere.

"A Dr. Foché, in Germany, has, however, made some discoveries, which he thinks will solve the question. He has examined a great number of these forms, and finds in many of them that the anthers are entirely destitute of pollen. This is a very interesting fact. Then he infers from this that they are hybrids; but this may not be a fact. It is too much the fashion in Europe to attribute sterility to hybridization. Undoubtedly hybrids are often mules; but not always—not any way near always.

"This theory of Dr. Foché's assumes that there were originally a few species, and that they have hybridized together naturally, and hence the varieties. The sterile anthers afforded the only proof.

"That this does not prove it is clear from the observations of Dr. Horatio Wood given in our journal two years ago. He discovered that the anthers in Dr. Houghton's Pear blossoms had no pollen, in advance of Foché's discoveries. Whatever may have caused this it is clear that it was not hybridization; for the Pear, *Pyrus communis*, will not hybridize with other species of *Pyrus* so far as known."

GEOGRAPHICAL RANGE OF AMERICAN GRAPES.

—Mr. T. V. Munson tells the *Wine Grower* that:

"A number of the Faculty of the Geological Survey of Canada have very kindly aided me in determining the Northward distribution of *Vitis* in America, and some doubtful points I settled for them. One was, that they had classified certain long-leaved forms of *V. Riparia* as *Cordifolia*, and others with broader, more shouldered leaves, as *V. Cordifolia*, and had put the limits of *Cordifolia* almost identical with *V. Riparia*, but their specimens sent me showed they had nothing North of the Western Peninsula of Ontario but *V.*

Riparia, and that it extends from Nova Scotia, in its most Northern range, Westward across the St. Lawrence, up the Ottawa River, along the Northern borders of Lakes George, Huron, and Superior, to Southern part of Lake Winnipeg, thence up the Assiniboine River 200 miles, but no grapes so far are reported in British Columbia, though so much milder than Manitoba and Canada East, especially near the Pacific and on Vancouver's Island."

The Editor of the GARDENERS' MONTHLY in his collections on the Pacific Coast, collected no specimens North of the upper regions of the Merced River, though no doubt it exists much further North. We should be glad to have notes from readers in Oregon and Washington Territories, as to localities where the wild grape grows—or even British Columbia, if it really has been found there.

UTILIZING THE EARTH'S HEAT.—Natural gas has been utilized, and there seems some chance to heat our greenhouses by natural heat. It is now tolerably certain that instead of fifty miles, the molten portion of the earth may be reached at ten. At Pesch in Hungary, a bore 951 meters, finds the water 161°. In some of our Colorado mines taken horizontally into the mountain sides, the heat is so unbearable that men can scarcely work.

A HYBRID PALM.—A hybrid between two distinct genera is figured in the November number of *Revue Horticole*. It was obtained by Mr. Denis, of Hyeres, between the common Date palm, *Phoenix dactylifera*, and *Chamærops humilis*. Mr. Naudin gives it to neither genus, but makes it a new one—*Microphoenix Sahuti*. The hybrid is fertile.

BURNING FUNGUS SPORES.—Referring to the potato disease, an admirable treatise before us says: "From what has been said it follows that the parasite may often live over winter in the tops or decaying tubers left in the fields after harvest. Prudence would, therefore, dictate the complete removal and destruction of such refuse. It should be buried or burned."

There should be no objection to this. It is certainly no harm to burn fungus spores. But we are inclined to think the recommendation prevents students from looking into the cause of disease from fungus operations. All that we may burn on a whole crop of potato stems will be but as a drop in the bucket, as compared with those that escape the burning. As the same good treatise says, speaking of the first appearance of the potato disease:

"A critical inspection of the diseased tops shows numerous small white spots scattered over the

leaves and stems. When highly magnified these spots are found to be miniature forests of slender stems growing up out of the surface of the leaves and stems of the potato. These tiny stems commonly branch and swell out at the ends into ellipsoid or oval bodies, known as summer spores. These little spores are produced by millions and are so small that a million could easily lie side by side on a square inch without crowding. When ripe they separate from the stem by a joint and fall."

Such tiny organisms scarcely "fall," but are borne away everywhere on atmospheric currents.

From their immense number we may regard them as almost omnipresent when they once get a foothold in any locality, and the burning of a few million of no account whatever. Yet the disease, virulent in one season, will often not appear the next or perhaps for many successive years. Why? Not because the spores have been destroyed, but because the conditions for their germination have been unfavorable. We may never hope to "stamp out" these plagues, but we may hope to learn something about the favorable conditions, and then perhaps control them.



SCRAPS AND QUERIES.

GINSENG.—"Mrs. E. J. D." writes from Nicholasville, Ky., that this plant is still found in good quantity in the mountains of that part of Kentucky.

Mrs. J. S. R. Thomson, Spartanburg, S. C., writes: "If 'H. H.,' Wilmington, Del., will send me his address, I can supply his wants. Here the herb is used extensively, not only by the 'cracker' population, but by the better and more intelligent class, as a tonic, whose medicinal properties are considered very valuable."

POTATO ROT.—Prof. Erwin F. Smith, Ann Arbor, Mich., desires to know "Whether the potato rot was present in Pennsylvania last year, and if so, to what extent—part of the State in which present? and per cent. of crop destroyed by it? I am trying to get an idea of the extent of the disease. Did you hear of it in any part of the South?"

[We did not hear of the potato rot any where in the Atlantic States last year. If any know that it existed, we should be glad to know.—Ed. G. M.]

HOST OF MISTLETOE.—Mrs. Thomson notes, that in Upper South Carolina, "I found it in greatest abundance on our Swamp or Water oak. 2d, on Persimmon. 3d, on White locust, (wild acacia) and 4th, on White or Post oak."

THE WINTER IN SOUTH CAROLINA.—A lady writing from Spartanburg, South Carolina, notes that the thermometer fell during the great storm, 10° below zero.

PRIMULA OBCONICA.—“A. G.,” referring to the paper by Mr. Oliver, in our last, notes, that

Hance, who originally named the species, gives China and not Japan, as its native country.

MISTLETOE.—“Mrs. E. J. D.,” reports that at Nicholasville, Kentucky, the walnut and the locust trees, seem the chief favorites of the mistletoe. We shall be glad to hear from other localities.

LITERATURE. TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

GESNERACEOUS BEAUTY.

BY WILLIAM T. HARDING.

The philosophic Bacon remarks: “God Almighty first planted a garden, and indeed it is the purest of human pleasures. It is the greatest refreshment to the spirits of man, without which buildings and palaces are but gross handyworks.”

The logical, and well-chosen language of so profound a thinker, cannot fail to carry conviction to the mind capable of comprehending the sage. And many of his wise maxims are obviously as applicable to us, in our time, as they must have been to the men of his generation. Admitting that our ancestors were in some respects, less refined than ourselves, yet there were notable instances of a cultivated taste exhibited among individuals, in times past, which if more closely imitated, or adopted, would be no disparagement to us now. And as regards the pure and genuine pleasures of horticulture, in whatever age it was fostered, we may reasonably suppose, it proved equally as gratifying to those who could appreciate the ancient calling, in the days of yore, as it is enjoyable to us in the nineteenth century. That they did the best they could with what they had, and felt as proud of their meagre collections of fruit and flowers, as was possible under the circumstances, is clearly evident, from what we are able to learn about them. But of the lovely flowers I am about to discuss, our forefathers knew nothing of before 1793, as the first representative, *Gesnera acaulis*, from Jamaica, was not to be seen under cultivation previous to that period; consequently, they did not miss them, as we should, were it possible they should from hence disappear. And a well-known author, in expressing her gratitude for the many good things our Creator bestows, says: “Of all

the beautiful soul-stirring gifts God has created, surely nothing can excel that of flowers. They come like God's own words to tell us of hopes and peace, and happiness, to draw our thoughts and desires to 'the Better Land.'” And, with such happy assurances as these, it seems but natural we should love them as we ought. “So mote it be.”

It is generally admitted by all recognized judges of floral beauty, that the interesting members which compose the charming family of flowering plants, embraced in the natural order, Gesneracea, are eminently worthy of all possible admiration. Justly entitled as are the whole of this good-looking group to our highest encomiums, my pleasant task shall be to briefly describe their winsome ways, as I remember them. And in so doing, I propose to leave the beaten paths, along which wiser, though possibly not happier ones, have previously passed over, and which usually led to the greenhouse, hot-house or conservatory, where such dainty and beautiful things are mostly found.

That within glass structures for many years, they have often made glad the heart of man, and never failed to give him a cheerful countenance when yielding to their charms, is a fact, nobody can deny. But for the present, I propose, if the gentle readers will venture to follow, to lead them out into the pleasure garden, among the trees and shrubs, “where harmless robin dwells with gentle thrush,” where the grass is smooth and green, and from which spring the gay parterres, and there show what excellent uses they may be put to in decorating the grounds during the summer season.

If some suitable, picturesque part of the lawn is chosen, where they can be nicely bedded out in cosy spots, not much exposed to the sun, both *Achimenes*, *Tydeas*, *Gesneras* and *Gloxinias* will there bloom profusely, and thus make one of the grandest shows imaginable.

Of the first-named genera, *A. Eclipse*, *A. longiflora*, *A. longiflora alba*, *A. Williamsii*, *A. Pink Perfection*, *A. rosea elegans*, *A. Parsonii*, *A. Ambroise Verschaffelt*, *A. Gorgeana discolor*, *A. Aurora*; any, or all of the ten selected kinds, will prove exceedingly effective when blooming.

Of the same kindred are the brilliant and free-flowering *Tydeas*, whose striking resemblance of features, makes manifest the fact that they are near kith and kin to the former, and, like them, are extremely attractive. They are as conspicuous in the beds, as they are remarkable for the wonderful profusion of handsome flowers they produce and carry through the season. In fact, they never cease from blooming, after they once begin, until unpropitious weather finally stops them.

And ten excellent kinds will be found as follows: *T. venosa*, *T. Alexandre*, *T. Bellona*, *T. tricolor*, *T. Minerva*, *T. Ophir*, *T. Cynthia*, *T. Adonis*, *T. Zenophon* and *T. Etna*.

In close relationship to the two genera mentioned, are the rich, velvety foliaged *Gesneras*. This truly magnificent group is fully equal in floriferous beauty to any branch of the family under notice. A selection of ten choice varieties is herewith given, viz.: *G. Duvalii*, *G. refulgens*, *G. oblongata*, *G. densiflora*, *G. Exoniensis*, *G. Donkelaari*, *G. violacea*, *G. macrantha*, *G. nigrescens*, *G. Cooperii*. In connection with these are several novelties of hybrid *Gesneras*, crosses between *Achimenes* and *Gesnera*, and which are said to be, if possible, more beautiful than the parents from which they sprung, admirably combining as they do the pretty features of their illustrious progenitors.

Passing other interesting curios which claim kindred with this highly ornamental race, such for instance as the splendid semi-double *Gesnera*, or the pretty little *Eucadonias*, through whose veins course and commingle the life sap of *Tydeas* and *Gloxineas*; and the very attractive progeny resulting from such a distinguished alliance is considered extremely elegant.

There seems to be a natural affinity, in this same natural order, for one genus to hybridize with other susceptible ones, and when thus united are apt to produce novel forms of progeny; the latest of which is described in the August number of MONTHLY for 1885. It is there stated that "a hybrid between *Gesnera Donkelaari* and one of the common greenhouse *Gloxineas* has recently appeared, and is to be known as *Gloxinea gesneroides*."

Speaking of the satisfactory results, in a flori-

cultural sense, I can well imagine how the unique offspring of two such renowned beauties, as the pretty cousins' *Donkelaari* so successfully joined together, "must all the world delight," in some measure or degree, with their superlative charms. When the "Illustrious Stranger" arrives on this side of the sea, like the rest of its handsome predecessors, I can vouch for its being warmly welcomed among us. And after making a favorable debut under glass I doubt not but what it will eventually be found flourishing side by side together with its much admired congeners in beds and borders about the lawn.

To succeed in producing the superb display I am attempting to picture—out in the garden—requires more patient attention, probably, than horticultural skill, and is thus simply brought about: To begin with, procure from any reliable nurseryman or florist who deals in such delightful things: either the plants already grown, when time to plant out, or the dormant roots of the species mentioned, or of other kinds if they can not be had, early in April, when they may be started to grow. Plant them in well drained pots or pans, in a compost of thoroughly decayed leaf mould, light sandy loam, and good peat, of about equal parts. Put about six or seven roots into a 5-inch pot, and as many as are required to furnish the beds, and cover with soil about half an inch deep, water, and set them on a mild hot-bed, where, if kept warm and moist, they will soon begin to grow. When the plants are an inch or so high remove them to where they will have more light and air. And while thus encouraging them to grow they will soon get strong and hardy enough to plant out in the prepared beds or borders from about the middle to the end of May.

The *Gloxineas* may be started into growth early in March, with a single root placed in the centre of each pot, and, according to the size of the root or tuber, must the pot be in which it is placed to grow, big or little, as the case may be. If placed in a gentle heat under glass they will make nice stocky plants in time to put out with the other things; when of course they must be cleanly and carefully removed from the pots and properly arranged in the beds. And the same kind of soil recommended to start them in, with the addition of one part of old rotten cow-dung well incorporated together, will suit their somewhat fastidious tastes, and make them grow vigorous and beautiful.

Supposing the plain hints or instructions here-with given are thus far carried out, choose some

mild day for the operation of transplanting, and as the contents of each pot is deftly turned out into its proper place, put under the leaves of each plant a thin layer of nice green wood moss, or sphagnum, from the swamps, which will not only serve as a mulching for them during the hot summer months, but will also keep their handsome hirsute foliage and flowers clean when watering or raining.

The cosy and comfortable appearance the fresh, mossy green counterpanes give to the beds, over which they are smoothly spread, is both neat and becoming. To visit them in the morning, and see them in all the fullness of their exquisite beauty, ere Sol dissolves the bright diamonds and pearls, which glitter and sparkle on their handsome foliage and superb flowers, is indeed a pleasing sight, well worth rising early from bed to view; especially while the pretty feathered little choristers are sweetly chanting their matins to Aurora. And were these marvelously beautiful flower gems only capable of physical enjoyment, while so lovingly cared for, they would seem to be the happiest of all things flowery in this our pleasant sublunary world.

Besides the plan suggested, there are other pretty styles of tastefully making up beds of Gesnera, and Gloxinea in particular, as follows: Having made a round, oval, or oblong bed, of such a size as can be well filled with plants, commence with, for a centre piece, a nice specimen plant of *Adiantum cuneatum*, or *A. concinnum latum*, and surround it with a row of Gloxineas, neatly mossed beneath their leaves; the moss to be laid on under each succeeding row until the planting is completed. Then follow a mixed circle of ferns and blue lobelias, *Lobelia erinus speciosa*, or the Crystal Palace variety, every second or third plant to be alternated with an *Adiantum*. Another circle of Gloxineas is next in order, to be followed by one composed of ferns and lobelias, as previously described, in as many consecutive circular rows until the bed is filled to the last circle, or marginal zone. In it the ferns are to be omitted for an entire belt of dwarf lobelias, and the compact habit of *L. pumila grandiflora* is a desirable kind for the purpose.

It is advisable to plunge the ferns in their pots, so that they may be occasionally lifted to break off the roots which grow through the holes in the bottom should any of them grow too rank. They may thus be kept to the height required.

A handsome flower-basket bed may be readily formed by bending a rustic handle or bow across

from side to side, and planting some suitable climbing plants to be trained over it. Mahernias, Sollyas, Maurandias, Manettias, *Ecchremocarpus*, *Myrsophyllum*, *Ipomœa quamoclit*, *Solanum jasminoides*, *Tropæolum tricolorum*, *T. Jarratii*, or *T. peregrinum*; any of which will make an appropriate draping for the basket handle. *Thalictrum adiantoides*, *Linum grandiflora coccinea*, Sweet Alyssum, *A. Benthami-compacta*, or *A. Little Giant*, *Anagallis grandiflora*, *Mimulus moschatus*, or *Oxalis rosea*, make excellent substitutes for ferns and lobelias, and will give a pleasing variety of small growing plants, which present a most agreeable contrast to the larger leaved Gloxineas.

Entertaining as the writer does the greatest admiration possible for all the favorites herein mentioned, the lovely sisterhood of Gloxineas, notwithstanding the acknowledged charms of their flowery kindred, bears the palm of beauty. And to invidiously single out their names, when all, without exception, in their various types of loveliness, merit equal praise, would seem unkind in me. Yet, however that may be, the sight of them always reminds me of the vanished past, and in their comely faces I seem to catch fleeting glimpses of my youthful days "when we were first acquaint."

Mount Holly, N. J.

TREE AGENTS.

BY MRS. E. BONNER.

If, instead of saying "I should smile," I merely say I smiled when I read Rose Terry Cooke's article in February No. of *GARDENERS' MONTHLY*, I trust I shall not be accused of using slang.

And if I should say as regards her experience with agents, that four-fifths of all the women and men too (corroborated by the Editor's statement) "had been there," it will only be set down against me as "a slip," and very expressive, though possibly heard sometimes, in not over-genteel society.

I think I can improve on one sentence of the Editor's, and yet I am astounded at my own assurance. Speaking of the ladies, he says: "We shall be glad to learn when her good nature yields to the blandishments of the mellifluous tongue of the tree agent." I would merely insert, "does not yield," etc. It is time for us to begin to apply ourselves to the task of gaining sufficient information to place us above the possibility of being so easily duped.

There is now in circulation, enough literature to educate the masses, so that they shall know for themselves what is genuine, and not be persuaded

into buying a plant whose only existence is in a beautiful colored plate. It may perhaps be said that there are very many who cannot afford to subscribe for magazines and papers, but all who can afford to buy flowers, can surely invest a dollar in the course of the year, and there are many instructive, chatty, little papers now published for even less than that.

Then I would like to refer to florists' catalogues, and the instruction they impart. They go their various ways "without money and without price," so far as the receiver is concerned, but how to deal with the subject as delicately as the case requires, makes me hesitate. Being interested, I cannot point out the many handsome things that—like the colored plate of the tree agent, only have their existence in the fertile brain of the florist—so freely as I would otherwise do.

But in the main, they are doing a good work, which is apparent to any one who will take the trouble to observe; and the encouraging sign of the times is, that each year the deceptions and misrepresentations are giving place to true descriptions of plants and their mode of culture.

One agent who has for four years past, bought miscellaneous of nursery and greenhouse stock, reports this year, that so far as florists' goods were concerned, his sales were a failure. Too many catalogues had been distributed over the land for him to continue selling blue, yellow, red, and every other conceivable color of primrose from the same lot.

As a rule, florists alone, send out but few agents, and there will be still less of it in the future. They can reach their patrons more easily by catalogues, and know there will be no misrepresentations, except their own, consequently, there only remains the "Tree Agent" to combat.

This prolific subject will not be complete without a bit of personal experience.

It seems to be the custom for nurserymen when in convention (I want to tread lightly here too) to adopt a form of catalogue which they all use. They do so here, at least.

In the list of Jasmynes in this catalogue, one was described as having "golden variegated foliage, retaining its variegation under the hottest sun, without scorching, a strong grower," etc., with many other good points, too numerous to mention.

As soon as the catalogue fell into my hands and I read this glowing description, I felt that "Life would not be worth the living" unless I could possess it. I wrote letters of inquiry to several nursery firms, but could not find it. Then the

tree agent happily appeared on the scene. He seemed a little surprised that I had his catalogue, and knew what he thought was a profound secret that they all used the same, but the knowledge did not check his "melliflousness." He tried to palm off various things; used all his eloquence, which was not his strong hold so much as his persistence, but I was invulnerable until it came to this Jasmine.

It is said all men have their price, and if women have too that Jasmine was mine; at any rate I "sold out."

When I called his attention to it, and asked him if he had it, "Why, certainly he had." The mere insinuation that anything should be in the catalogue that he did not have seemed to wound his sensitive feelings.

I was happy to have the privilege of paying a dollar for one plant, and waited its coming with the pleasing anticipation that my search had been rewarded, and that I would possess a plant which had at least the merit of being rare.

In due time it came, and I was delighted. It must be a large plant too, I mused, from the way the stack of straw in which it was enveloped was built out into a long cone-shape. I began eagerly to unwind the cord and remove the straw. Finally away down in the heart of it, was a little pot with a little plant in it, the size to be in "harmony with its environment." The plant was Jasmine "Poetica" that we had grown for years, and had plenty to sell at twenty cents each.

Such an experience is not productive of high and holy thought, but I must do myself the justice to say that I wrote a very moderate letter to the firm the agent represented, explaining the mistake that had been made, and asking them to send the plant I had selected and paid for. An eloquent silence of some weeks followed; then another elaborately wrapped package came, even larger than the first. This was hopeful, and I began removing the straw with a will. A little crevice opened revealing a bit of variegated foliage which looked familiar, and this time I got a large pot with a small plant of *Vinca Harrisonii* in it.

I paid the expressage the second time, and wrote the firm if they needed any more Vincas we would be glad to furnish them at one dollar per dozen, and if they found ready sale at the rate I paid there was surely money in them. This happened within the last year. "Thou, therefore, which teachest another, teachest not thyself."

The vower is a woman this time. Please register it in the Editorial mind.

Xenia, O.

EDITORIAL NOTES.

PROPOSED INCREASE OF POSTAGE ON SEEDS AND PLANTS.—Before this reaches the eye of the reader it may be that the question will have been decided. It will be useful, however, as showing that leading members of the Philadelphia delegation did not favor the change, and it may serve to direct thought should future attempts arise.

It did not seem to the Editor wise to join in the general attack on the express companies, in connection with this question. In some respects the change proposed would be to their benefit, in others to their loss, and it might be argued that express companies had as much right to "protection" as any other class. It seemed to us that the change was as much in the supposed interest of country store-keepers as of the express companies. Yet such an interest is wholly supposititious for store-keepers while forcing their neighbors to buy of them instead of sending for their ribbons to the towns by mail, would feel nettled if compelled to select from the limited stock of some neighbor's garden seeds instead of sending by mail for a greater assortment.

But it seemed to us the proper course is always to object to going backwards. No matter how mistaken the policy of a two-cent letter as against the shilling letters of our grandfathers might be, no one would think it wise to go back to that now; nor would it be wise to go back in this case. In this light we addressed the following letter to the gentlemen whose replies are appended:—

"GERMANTOWN, PHILA., Feb. 26, 1886.

"My Dear Sir—As a representative of interests largely affected by the Wilson Bill, increasing postage on seeds and plants, I beg to enter a respectful protest against it.

"There are numerous arguments against the Bill, but the recognized principle that reforms should never go backwards surely ought to prevail here.

"Innumerable branches of business, wholly created by the present rates of postage, will be ruined by the proposed change.

"Allowing that the Government blundered by making the postage too low in the first instance, would it be justice to this large class that it should now suffer for the Government's mistake? Is there anything in the financial needs of the country to warrant this unfilial course?"

"WASHINGTON, D. C., Feb. 20, 1886.

"Thomas Meehan, Esq., Germantown, Pa.

"Dear Sir—Yours of yesterday with reference to the proposed change of postage on plants, seeds and bulbs is at hand.

"I know nothing of the prospects of the bill to which you refer, and quite agree with you that if,

even by a mistake, Congress by putting the postage so low as to make the business unremunerative to the Government, and thereby called into existence large business interests, it ought not, while the treasury is overflowing, to endanger those interests by increasing the rates of postage. What I as a layman on postage matters can do to prevent such a backward step will be done, but those who are likely to be injured by such legislation should communicate with the committee on Post-Offices and Post-Roads of which my immediate colleague, Gen. H. H. Bingham, is a member.

"Yours very truly,

WM. D. KELLEY."

"HOUSE OF REPRESENTATIVES U. S., }
WASHINGTON, D. C., Feb. 22, 1886. }

"Thomas Meehan, Esq., Germantown.

"My Dear Sir—Your favor of the 18th inst. is before me and contents appreciated.

"I fully agree with you on the 'Wilson Bill,' shall do all in my power to defeat the measure, and I am pleased to say I find many, enough, I think, to defeat the bill, ready to join me.

"Faithfully yours,

"A. C. HARMER."

"WASHINGTON, D. C., February 28, 1886.

"My Dear Sir—I have your favor of recent date, and have duly noted its contents. I will resist the passage of the legislation that is proposed in the Wilson Bill, and feel confident that we can defeat it, either before the Post-office committee or in the House. It is unnecessary for me to enter into details, as I am unfortunately pressed at this time with very sad family complications.

"Very truly yours,

"HENRY H. BINGHAM.

"Thomas Meehan, Esq., Germantown, Pa."

THE BROTHERHOOD OF ST. DOROTHY.—"Inquirer" says: "In your very interesting note on the history of the potato you refer to the potato having had its first great impetus in cultivation given to it by a body of gardeners known in Germany as the Confraternity of St. Dorothy. I have always been interested in the historic associations which trades and peoples have with ancient personages, but am at a loss to know what gardeners have to do with St. Dorothy. We know why St. Patrick, St. George and St. Andrew have a place in the hearts of Irish, English and Scotch people, why St. Crispin is honored by shoemakers, and St. Cecilia by musicians, but none of the Encyclopedias give me any clue to this association of gardeners with St. Dorothy. If the Editor can enlighten the reader, I believe more than this 'Inquirer' would be thankful."

[We cannot answer this question to our entire satisfaction. There may be something in German or French tradition, outside of written history, which only some intelligent French or German gardener could explain.

There is however a legend connected with Dorothy, familiar no doubt to those who love ancient history, which may give some clue to the information "Inquirer" desires.

She appears to have been a native of Caesarea, a Cappadocian city subject to Roman power, and the centre of early success in the propagation of Christianity. Two other celebrated Saints, Basil and Gregory, were also Caesareans. Dorothy, according to the legend, was one of the earliest converts, and lived some time before the year 300. She adopted the life of a celibate, which, for some reason not clear from the story, angered the Governor of the city, and she was imprisoned. Here she was visited by a young man named Theophilus, who endeavored to gain her hand. She put him off by asserting that she was already engaged to a heavenly spouse. He desired tangible evidence of the fact. She prayed to Jesus to make fruits and flowers miraculously appear, and the Saviour at once answered her prayer. She gave him these heaven-born fruits and flowers, and he was so convinced of their celestial origin that he not only withdrew his suit, but became a convert to Christianity.

One who could obtain fruits and flowers in that way surely deserves to be a patroness of gardeners.

A NEW JOURNAL OF FORESTRY.—At a recent meeting of the Massachusetts Horticultural Society the Reverend J. B. Harrison said: "We need a periodical which shall be devoted to the persistent education of the people; not by elaborate æsthetic essays, but by short, sharp and incisive articles, with iteration and reiteration. Here in Boston is the place for a journal to be devoted to this work. Nothing can be finally adequate to this subject which does not provide for an advance in civilization. We might make attractive forest places near cities, preserving the sources of water."

PROFESSOR EDOUARD MORREN.—Few men distinguished as botanists have become better known to horticulturists than Edouard Morren, Professor in the Botanic Garden at Liege, Belgium; and his death at the early age of 53, and in the full tide of his usefulness will be universally regretted. This occurred on the 28th of February, and he was buried in the family vault at Robesmont. His native place was Ghent, where he was born on December 2d, 1833.

Beside membership in many scientific societies, he had a full share of the public honors, which in the old world are offered to men whose usefulness

in the arts or science become eminent. He was an officer in the order of Leopold, Commander in Roumanian Crown, Chevalier in the Legion of Honor, and a number of others of this class.

ROBERT J. DONNELLY.—Among those who worked so ably to make Rochester eminently the "Flower city" of this continent, the name of Robert J. Donnelly stands prominent, and his death in that city on the 27th instant, will be deeply regretted, not only in the city for whose fame he did so much, but in many parts of the Union where his trade reached, and where he was so honorably known. His business embraced everything in the nursery trade, and was, we believe, one of the largest in the State of New York. He was born in Montreal, 1824, and settled in Rochester in 1839. He has been in ill health for some time.

PROF. W. S. CLARK.—The death of this gentleman during the past month is announced. He was once President of the State Agricultural College of Massachusetts, at Amherst, and will be well remembered by many of our readers in connection with some very interesting experiments on plant life made some years ago.

JOHN PERKINS.—Just as we go to press, we receive word by telegraphic news that this well-known nurseryman, of Moorestown, N. J., was killed, recently, by an accident on the Penna. R. R., at Riverton, N. J. Mr. Perkins must have been pretty well into his threescore and ten, and was well known in connection with the nursery business, particularly as a large grower of peach trees.

AMERICAN POMOLOGICAL SOCIETY.—Session of 1885. From Charles N. Garfield, Secretary, Grand Rapids, Michigan.

This comes to us with a singularly fresh odor. In former times, essays written especially for it have been given to the press, and the general public was quite familiar with everything before the volume appeared. This was as well when it took nearly a year before the volume appeared; now we have the fresh matter, and the volume itself fresh before the embers of the fire that prepared it have scarce grown cold.

The worthy President Wilder could not be present at the meeting, but the vitality manifested in the matter, and manner of the appearance of this volume must be very gratifying to him.

The committee seem to have acted with commendable conservatism. Notwithstanding the legions of new fruits "brought out" since the last

meeting, the committees have thought but few worthy of record. The chairman on Native Fruits names only two of apples, two of cherries, three of grapes, one peach, one pear, and eight strawberries. The chairman of the Foreign Fruit Committee reported that of the large number of foreign varieties produced, not merely since last meeting, but during the last six or eight years, not one was worth naming. It would really seem as if perfection had been reached, and there was nothing for the new seedling man to strive for.

The essays and discussions are far above the average, and we do not wonder that our Western friends claim that the meeting at Grand Rapids was one of the most successful ever held.

PORTFOLIO OF RARE AND BEAUTIFUL FLOWERS.

—Mr. James Vick has issued folio sized lithographs of a number of beautiful flowers, and the pictures themselves are excellent specimens of the lithographer's art. With the pictures are folio sheets, beautifully printed, giving the literary and other histories of the flowers. The "Portfolio" will make a beautiful ornament to a ladies' table, and is just the thing to entertain visiting friends. It is published and sold by James Vick, Rochester, N. Y.

GRAY'S SYNOPTICAL FLORA OF NORTH AMERICA.

—Gratifying as it is always to botanists to have any publication prepared by Prof. Asa Gray, the reception of "Supplements and Indexes" to the two parts already issued will not be without some regret. The great hope of Dr. Gray's life must have been to leave behind him a complete account of the flora of a country he has done so much to develop. Years ago, in connection with Dr. Torrey, a "Flora of North America" was begun, but the immense number of new species that came pressing in with the exploration of the territories led to an abandonment of the work before the compositæ had been barely completed. This only took in for the most part the Polypetalous plants. Mr. Sereno Watson undertook an Index of this class, with references to where they were described, and this was the next best thing to bringing our knowledge down to date. Dr. Gray then worked on the compositæ, and these were brought down to recent date. Finally the Gamopetela, or Monopetela as they would once have been called, was undertaken, and these two parts bring the flora of North America down to date, leaving the diclinous class—a very large class—as well as the monocotyledous, to be provided for. If new plants or new treatment of old ones did

not interfere, Dr. Gray, though in his seventieth year, might reasonably have hoped to finish the work, but so much new appears that he can do little more than keep near perfect the work he has done. To accomplish this, the present supplement is issued. It adds 11 pages to Vol. 2, Part II, that has recently been issued, and 70 pages to Vol. 2, Part I. Complete indexes with the plants named in the supplement have been prepared.

Those who have already the two parts can buy this supplement separately for \$1. Those who have not, can now buy the two first volumes with all the new gamopetalous plants complete to date. Even should Dr. Gray not be spared to complete the whole work of the North American flora, it will be a satisfaction to him to have done so well so large a part of it. The two parts bound in one may be had of the Curator of the Herbarium at Cambridge for \$5.

ANNUAL REPORT OF THE ARNOLD ARBORETUM.

—By Director C. S. Sargent.

It is pleasant to note that the prospects of this becoming one of the most valuable institutions of the kind in the world, are drawing nearer. People who see nothing but the few score species in woods or nurseries generally, have but a poor idea of the number of trees and shrubs that are in the world, and might be introduced. In this report, Prof. Sargent tells how, if all the species and marked varieties of trees, hardy in Massachusetts, were set out with room for the final development of each, 1000 acres would not hold them all.

It seems to us that the whole country is interested in this work, and not merely Massachusetts, and it would be well if tree lovers generally were to get a copy of this report if possible, and study how they might aid in the work Prof. Sargent has at heart.

CATALOGUES OF SEEDSMEN, FLORISTS AND NURSERYMEN.

—We have a large number of these before us, showing remarkable enterprise and care, and mostly furnished with beautiful illustrations. We doubt whether any country in the world can show so much accuracy and general value to the purchaser as these exhibit. With these, in a large number of cases, are letters calling attention to them, and hoping they may prove worthy of notice in the GARDENERS' MONTHLY. They are undoubtedly worthy; but our limited space for notices of this immense number, places it wholly out of our power.

This explanation is necessary, as we would not have our friends think we do not regard them worthy, because we are totally unable to respond.

SCRAPS AND QUERIES.

HELIOTROPE, VANILLA.—*** remarks: "The common name of the Heliotrope with the Peruvians is 'Vanilla;' whether borrowed from the orchid bean of that name, or whether the Vanilla bean is so called from the resemblance of the perfume to that of the Heliotrope, we do not know."—GARDENERS' MONTHLY, p. 91.

The name Vanilla, as applied to the Heliotrope, was transferred from the Vanilla-pod, which is so similar in odor to the flowers of *Heliotropium Europæum*, that it is largely used by perfumers in the manufacture of extract of Heliotrope and Heliotrope sachet powder.

"The late Latin word, Vanilla (adopted in English), is an alteration of Spanish Vainilla, a diminutive of Vaina, 'pod,' from Latin, Vagina,

'sheath.' The plant was so called from its important commercial product—its long, slender, aromatic seed-pods."

[Ruiz and Pavon in the "Flora of Peru," say the flower is commonly called Vaynilla; the name is evidently given to it, as our correspondent shows, from the odor resembling that of the celebrated "pod or sheath" of the orchid of this name.

As regards its first introduction to English gardens, it may be well here to quote from Miller's "Gardeners' Dictionary." "It has a strong sweet odor, of a very particular nature, resembling bitter almonds. It grows naturally in Peru, whence the seeds were sent by the younger Jussieu to the Royal Garden in Paris. Mr. Miller had the seeds, 1757, from the curious garden of the Duc d'Ayen at St. Germain. It flowers here in England a great part of the year."—Ed. G. M.]

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

DES MOINES FLORAL ASSOCIATION.

BY THE CORRESPONDING SECRETARY.

At a meeting of the Des Moines Floral Association, March 4th, 1886, Mr. W. L. Morris read an essay on ventilation, wherein he set forth some of the errors in ventilating greenhouses. And one or two points were mentioned which may be of interest to some of the readers of the GARDENERS' MONTHLY. Mr. Morris says, in the first place, many err in building a greenhouse, by putting in as few ventilators as they think will possibly do, when they should put in all they possibly could use. But they should be small and as near the ridge as possible, so that when opened the cold air coming in would have as much chance as possible to become diffused and warm before it strikes the plants, for I think a cold draught or sudden change, as harmful to plant as animal life, although they may not show it so plainly. And many who are opposed to steam, are ventilating in a manner that causes more sudden changes than steam heating. They do this by having their vents so large or so few of them, that

in order to get the needed amount of fresh air, they must make so large an opening that the cold air rushing in to fill the vacuum left by the warm air passing out, comes in in such volume that it injures the plant by a draught or chill.

But with the fact before us, that cold seeks the lowest level, and heat the highest, I think we should have vents to introduce fresh air at the floor. Thus, the warm air would pass out above, and the cold air will remain near the floor until it gets warm enough to rise. And so we would have no cold air strike the plants; no strong draught, but a gentle circulation through the entire house. I think every greenhouse should have Hitchings' or some other ventilating apparatus, whereby an entire line of vents can be raised or lowered in a second, by the turn of a crank. Thus more attention can be given in changeable weather, and less time and labor required, than by the old way of a separate rod to each sash.

Quite an interesting discussion followed the reading of this essay, and more particularly in regard to the floor ventilators. We should like to hear from others on the subject.

EDITORIAL NOTES.

THE GRAND RIVER VALLEY, MICH., HORTICULTURAL SOCIETY.—This society will henceforth have meetings twice a month. At a recent meeting it was resolved that nothing is known of the cause of the Peach yellows, or of the cure of the potato disease, though the cause is known. The society is composed of very energetic material.

MASS. HORTICULTURAL SOCIETY.—The general interest the whole community takes in the Mass. Hort. Society is evidenced by its schedule of premiums, which has no less than 647 items for entries. As they have fourth and fifth premiums and none less than three, we may conclude that they fairly expect an average of three or four hundred separate exhibitors. We should be glad to know the number of separate exhibitors who entered last year.

PENNSYLVANIA HORTICULTURAL SOCIETY.—The spring exhibition of the Pennsylvania Horticultural Society was held on the 18th of March, and resulted in a very pretty show. The gardeners and amateurs seem to have been frightened out of competition with the successful exhibitors of last year, so they had the field in a measure to themselves. The chief interest settled on the Holland Premiums for Hyacinths and other bulbs. The Gold Medal for fifty Hyacinths was secured by D.



The Holland Bulb Medal.

Fergusson's Sons. In the absence of any definite rules as to what constitutes a first class Hyacinth, the work of a judge is very unsatisfactory. What is a "best" Hyacinth to one, is inferior to another. It is to the credit of a large number of the exhibitors of this society, that they are lenient to the judges, and are generally satisfied with the awards made. In these cases there was a certain something unnamable that made all feel the judges had made fair decisions in spite of the difficulties of

their position. The Gold Medal set were of nearly uniform height, had the heads from about few under 6 inches long, and the strong stems well up above the foliage. The leaves were comparatively short and broad, from 4 to 12 inches long. The plants grown in 4-inch pots. The Holland Silver Medal, to Christian Eisele. These had an average of shorter heads, the range being about 4 inches, and the flowers were not thrown as far above the leaves as the others.

First premium for twenty-five kinds of Hyacinth was awarded to Mr. A. Warne. These were in 8-inch pots. These were remarkable for the size of the individual flowers; the spikes were elongated, and not in the dense masses noted in the plants of other growers. The second best, to Mr. Ch. Eisele, had the bulbs split, so that there would be two or three small spikes as well as the one larger. This we suppose would be looked on as a defect in a first-class Hyacinth.

First premium for the best six plants of the old white Lily, *Lilium candidum*, was awarded to Mr. W. K. Harris. They were in 6 inch pots, about 4 feet high and with seven flowers. The first for *Lilium longiflorum* Harrisii, to Griffin Bros. These were about 3 feet high, with about six flowers on each, with the very large flowers having a tube of about 7 inches long. The best single specimen of this variety, to J. W. Colflesh, had more flowers, but more slender stems.

First six Tulips, to A. Warne, gardener to Mr. Clarence H. Clark. Six kinds, six plants in a 6-inch pot. The leaves were large and healthy, flower stems 8 to 10 inches, and the large 4-inch flowers uniform in all the kinds. Mr. W. K. Harris had second premium; these were six plants, six of a kind, in 8-inch pots. These were not so regular in growth, and size of flowers or strength of stem, but the varieties were very distinct, which was a good point. Duchess de Parma, Joseph Von Undell, Rosamond, Cottage Maid and Grand Duke were particularly distinct sorts.

Mr. W. H. Harris, first, for six *Amaryllis*. These were all of A. Johnsoni, in 8 inch pots, and had from two to four flowers on each scape.

First for Lily of the Valley, Mr. A. Warne. These were in 8-inch pots, plants about 12 inches high, and giving about twenty-five spikes of flowers to each pot.

Of general flowering plants there were quite a number of collections of *Cinerarias*. Without knowing the rules of the judges as to what would be regarded as "best" in these cases, we thought also the decisions fair. The first twelve, to George

Redford, were about 12 to 18 inches high, and the flower mass about the same in diameter. There were no novel colors among the flowers. The second, to Thos. Fould, were not as compactly grown, though very fine plants, and two pretty double varieties among them gave additional attraction.

The best twelve Hydrangeas, Mr. W. K. Harris. These were in 10-inch pots, about 2 feet high, with about six heads to each plant, each head about 4 to 6 inches across.

There were not many competitors in Azaleas, but the plants were healthy and well flowered. The first twelve, to be confined to 6-inch pots, Mr. W. K. Harris took. They ran from 12 to 20 inches high, and were grown rather broad at the top, the heads of flowers being about 18 inches across. New kinds are usually looked for when the competition is limited to the small pots. In this collection, General Hartman, a white with red carnation flakes, and Elize Zieber, with purple flakes, and in each the lobes of the corolla large, round and leathery, were very much admired.

The first six Azaleas went to Mr. A. Warne. These were of various forms, some flattened at the top, some hemispherical, but generally about 2 feet by 2, and with hundreds of flowers. He had first premium for single specimen Azaleas. This was of the variety, Stella, and was about 2½ by 4 feet high. It was somewhat oval in outline, drawing narrower, and rather flattish at the top. One variety in this collection—Mrs. Turner—a flaky pink and white, with the upper lobe crimson feathered, was much admired, as was also a perfect love of an unnamed kind, probably the old Phœnicia, which was about 3 feet high by 2 at the base, full of flowers from bottom to top, and showing how well adapted this style of training is for making pretty specimens.

First, for twelve plants of Astilbe or Spiræa Japonica, J. Kift and Son. These were about 1 foot high, and with about a dozen spikes in each pot.

The first, for ornamental foliage plants, went to Mr. A. Warne. A very rare plant here was Araucaria Rulei. It has foliage somewhat in the way of the common Norfolk Island Pine, but shorter, or at least thicker, which made them seem shorter. A very pretty thing also was a fern, Davallia Mariesii, creeping over a conical block, which its creeping rhizomes covered, from these a dense mass of parsley leaved fronds proceeded.

A new contributor in flowering plants, Mr. John M. Hughes, gardener to G. W. Childs, had a special premium. The Chinese Primroses in this set

showed how much this fine old plant has been improved in varieties of color and form. One was nearly crimson. Only two orchids were on exhibition, small plants of Dendrobium nobile and D. macrophyllum. Grand floral designs, so abundant when flowers are cheap, were scarce at this dear season of the year. Mr. Charles Fox had a "Funeral piece." It was a wicker basket about 4 feet high with begonias, ferns, palms, etc., planted around. Among the tall plants at the back was a cross with the arms oblique somewhat, Greek fashion, the flowers used being Cornelia Cook roses, deutzias and other white flowers. At the foot of the cross was a white lamb reclining. It was made of white carnations with sweet alyssum for the nose and face. Certainly if ever floral designs are pardonable it may be here, for the carnations made an admirable curly fleece, and the face of sweet alyssum could not be better done. Among cut flowers, Mr. John Stewart, of Washington, D. C., showed what had been done to make variations in the pansy. He must have had over a hundred varieties.

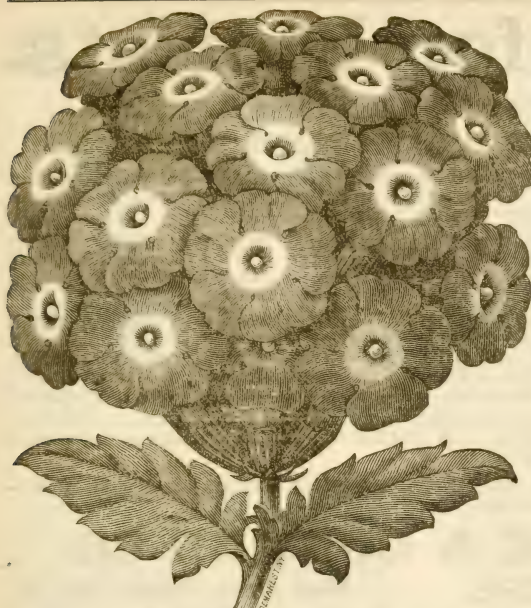
Griffin Bros. showed by a nice lot of seedling Carnations, that hopes of improvement still animate the floral breast.

Mr. Sturtevant, of Bordentown, New Jersey, had cut flowers of the blue Water Lily, Nymphæa Zanzibarensis. Cut roses were in some force, confined chiefly to the kinds now popular with florists. General Jacqueminot, from Lonsdale and Burton, showed that notwithstanding the efforts made to find something as good, it is yet without a compeer; and the collections of Pennock Bros. told but too well, that, with the exception of the Bennett and Sunset, the Perle des Jardins, Bon Silene, Niphotos, and similar veterans were still disposed to dispute possession of the field.

Mr. May had specimens of the new sport from the Catherine Mermet, called The Bride. It is very beautiful, though not a pure white. It has a slight lemon tint, somewhat in the style of the old Devoniensis.

A collection of Zonale Pelargoniums by J. W. Colflesh, had a first premium awarded. They were very nicely grown plants, about 2 feet high and wide, and had from eighteen to twenty heads on each plant. It is rarely we see these better grown.

There were numerous other good things by worthy exhibitors; our object in these notes is simply to supply distant readers with some idea of what Philadelphia exhibitors would consider good exhibition plants.



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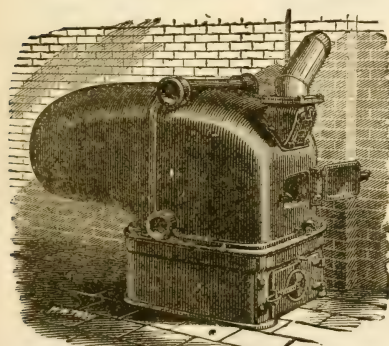
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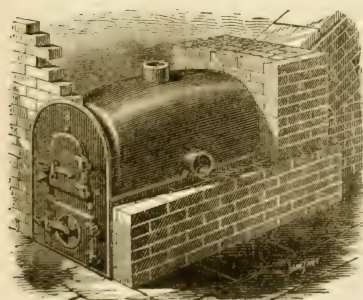
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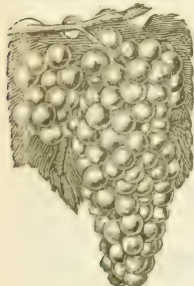
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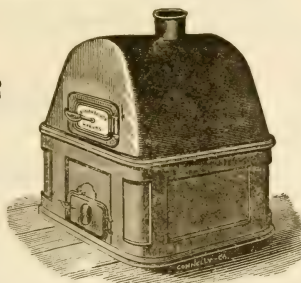
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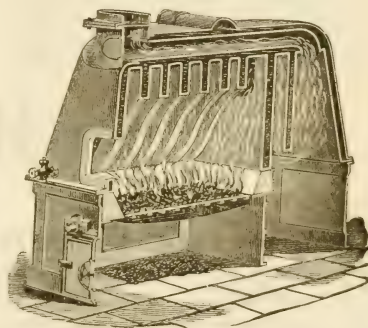
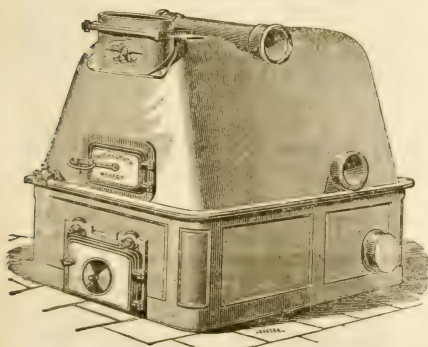


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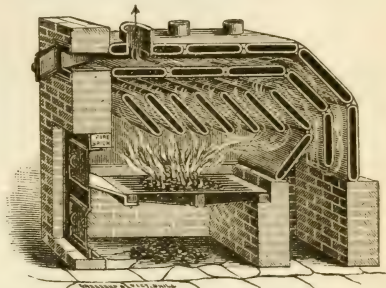
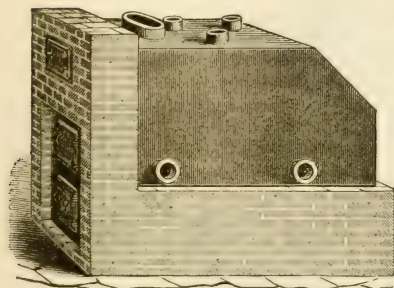
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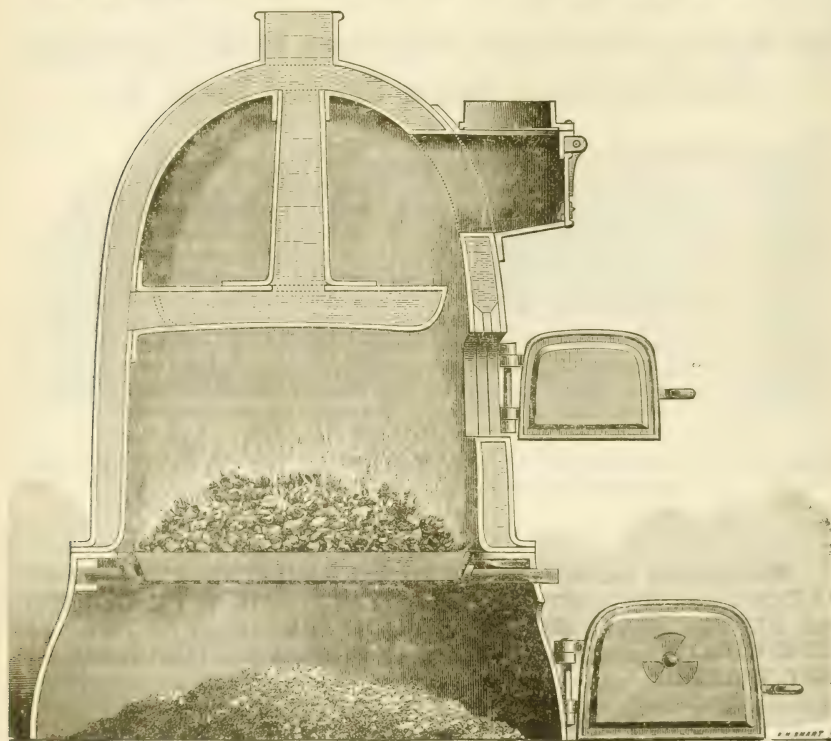
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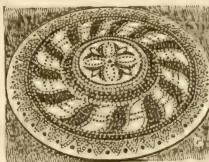
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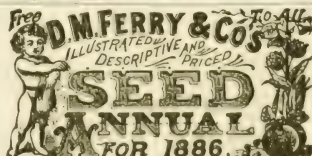
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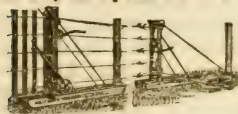
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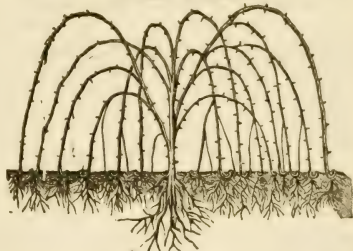
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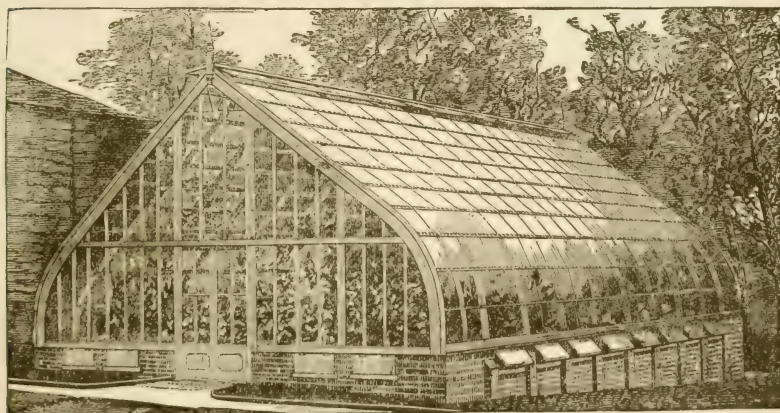
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Edited by THOMAS MEEHAN.

VOLUME XXVIII.

MAY, 1886.

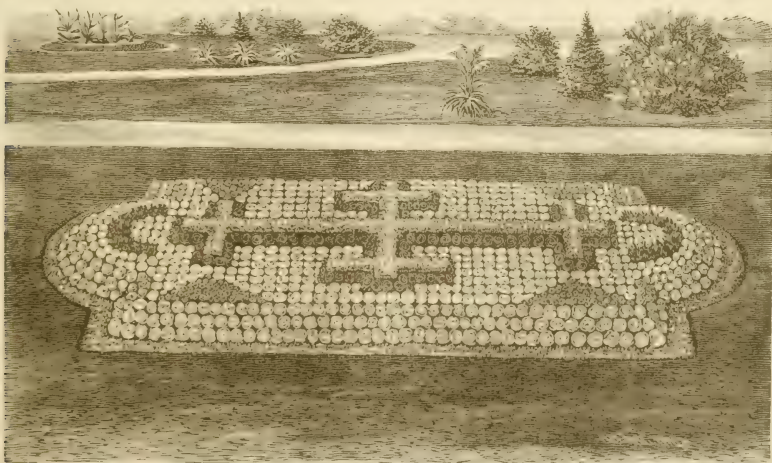
NUMBER 329.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

Mosaic beds, so much derided when the style was introduced, seem to have touched a popular chord, and instead of being laughed down are more

we have been wishing that some one would get up a book of plans in cheap style, so that we could refer all inquirers to them. As if "a little bird" had whispered the thought to them, Messrs. George A. Solly & Son of Springfield, Mass., have



in vogue than ever. We have from time to time given some sketches of beds, and designs for filling them; but so many continue to inquire, and there is so much variety to choose from, that

gone and done this excellent work, and we have before us their "Book of Plans" that meets the want exactly. There are twenty-five folio sheets, with several designs on each sheet, which can easily

be worked out by any intelligent person; and besides the designs themselves, the sections of each design are numbered in such a way that any person can tell by the corresponding numbers how to plant the bed; each number of course signifying that the same plant is to be used. We give herewith a view of a bed which has been laid off after a design of Messrs. Solly, which will show how pretty a mosaic bed may be, and how well they work in among the various elements in artificial gardening.

A key is furnished with the book, which gives a list of plants suited to colors to go with the numbers.

This is not the period of the year to thin out trees when they have become too thick on the grounds; but the autumn will soon be here, and in view of the importance of the question, it seems a seasonable hint to be given now. It is surprising, in view of how much has been written about it, so little thinning is done. In our own city of Philadelphia, where, if anywhere, one would think the influence of the GARDENERS' MONTHLY would be felt, thousands of trees are annually destroyed by the struggle with one another, simply because of a sentiment that it is not wise to destroy in an hour what it has taken a quarter of a century to grow. Let any one note a tree standing by itself—note it at this season, when covered with foliage, note the branches extending, perhaps, fifty feet from the trunk, and admitting a glorious current of cool air under it; and then note the score or two of trees crowded together in a hundred feet lot, the branches struggling upwards to get a glimpse of the sky—forming an impenetrable mass through which not a breath of air can stir, and he will see the difference. The owner often sees it; and instead of thinning the trees, calls in the aid of the tree-butcher who lops off the heads. The result is, these large scars never heal, the wood rots, and in a few years the trees have to be taken out at any rate—the whole tree is gone. And then, what do lopped trees look like? They are outrageous in the sight of every person with even the germ of taste. Street trees especially suffer from this unseemly crowding. It is very well to put trees about 20 feet apart at first, because we get some shade and some ornament sooner than we should do. It looks naked for too long a time, to have small trees so set with the view to what they will be in a quarter of a century hence. It is best to set double the number of trees finally required, with the firm determination to take out the half

ten or twelve years after; or that some one else may do it, if we should ourselves be in another land.

COMMUNICATIONS.

AMARYLLIS (ZEPHYRANTHES) ATAMASCO TREATÆ, AND CANDIDA.

BY MRS. J. S. R. THOMSON.

Again and yet again the question of the difference of the above-named *Amaryllis*, comes under discussion. I have a genial adviser, who recently wrote me this sentence: "Yes, write, but write what you know, not what others have written already," and as that is totally beyond my powers, I wish to parenthesis this by explaining that this article is only a compilation, with hope that by it, the vexed question may be laid on the shelf. In June GARDENERS' MONTHLY, 1885, Mr. Meehan kindly copies from Chapman's "Flora of Southern States," the description of *A. Atamasco* and *Treatæ* in answer to my query "if there was any difference at all, only creditable to difference to locality."

"*A. Atamasco* (Linnæus).—Scape terete somewhat lateral; one flowered; leaves linear, concave, fleshy; spathe, one-leaved, two-lobed; perianth short, bell-shaped, white, tinged with purple; style longer than the stamens; seeds angled. March and April. Scape 6 to 12 inches high, commonly shorter than the glossy leaves; flowers 2 to 3 inches long.

"*A. Treatæ* (Sereno Watson).—Named in honor of Mrs. Treat of New Jersey. Bulb small; leaves very narrow, only a line and a half wide, semiterete rounded margins, not shining; scape 4 to 12 inches high; flowers 3 inches long; peduncle 3 to 9 inches. April, May." [Note from M. I. T.: "Observe here a great difference in time of flowering—*Z. Atamasco* in South Carolina, March and April; *Z. Treatæ* in Florida, April, May."] [Note from Ed. G. M.: "The two are most readily distinguished in the rush-like leaves of *Z. Treatæ*, which is found only as yet in Florida. In beauty, we think the *Z. Atamasco* the prettier."

Extract from *Ladies' Floral Cabinet* edited by C. L. Allen, January, 1886:

"*Z. Treatæ*—A recent introduction, is the least valuable of the known sorts. Page 36.

"*Z. candida* (illustrated).—Native of South America, completes the list. Although last on list, is first in real usefulness. Leaves semi-cylindrical and rush-like, small, pure white, crocus-shaped, upright flowers, freely produced, very pleasing

at time when delicate white flowers are scarce. August, quite hardy, native of Lima."

I take issue upon two points with Mr. C. L. Allen: 1st, as to its being more useful or attractive than *Z. Atamasco*. First, because of the difference in shape of flowers. Where in *Z. candida* it is partly closed, same shape of crocus, and star when fully expanded, in *Z. Atamasco* it is a pure true lily shape, and deserves well the name "Fairy Lily of the South." Second, comparing it to our native variety. It may be of Lima also, but I have about 500 bulbs dug for me from native haunts in Mexia, Texas. The lady who collected them, wrote me that she found also a yellow zephyranthes. I think though, that is identical with bulbs received from P. H. Obberwetter, Austin, Texas, as "*Habranthus Andersonii*." He is far better authority than I, and I feel sure will corroborate this statement. My border of *Z. Atamasco*, 18 inches wide by 200 feet long, with bulbs almost touching each other, was in flower last spring from the 1st of March until late summer, not so abundantly as in March, April and May, but sufficient to give me flowers sparingly the whole season. They then rested until September. When the full roses began they also renewed their bloom and continued until hard frosts came. *Z. candida* I will note side by side this season. With me last year they flowered profusely in my pit up to November, sent me in August by my friend, already starting into growth, which, potted, commenced to flower in exactly one fortnight's time. I notice that both are now (some potted in pit) putting up leaves, and still my *Z. Atamasco* is ahead in that. Those are the bulbs that were trying to double themselves, of which I wrote, and whose seed, by advice of Mr. Sereno Watson, I have planted to note result. Seed pods in these were four-celled instead of three, as is usual.

Spartanburg, S. C.

THE CALADIUM AS A BEDDING PLANT.

BY A. WARNE.

Why these plants are not more generally grown for bedding purposes I cannot understand. Nothing can be more beautiful than these plants with their gorgeous foliage. They certainly would be a great contrast, and, at the same time, would be a relief to our close-clipped and somewhat formal looking carpet beds. They do well in light, sandy soil, with plenty of well rotted manure dug in before planting. Caladiums succeed best in partly shaded places; that is, where they get but three or

four hours' sun during the day. When planted where they are exposed to the sun all day they lose that brilliancy of coloring which is so necessary for a good effect. If allowed to get dry at the roots they also lose color. It is better to water Caladium beds in the morning, as by so doing they are kept warmer at night, and a more vigorous growth is the result. Care should be taken not to wet the leaves, as it has a tendency to take color from them. The second week in June is early enough to plant out. With the first signs of frost in the fall they should be taken up and placed in boxes, with a little soil round the bulbs. They then can be packed away under a side table near hot-water pipes. After the leaves have dried off the bulbs should be taken out and cleaned, then placed back in fine dry soil or sand, until it is desirable to start them into growth for the coming summer. I find, for bedding purposes, the first week in May is early enough to commence; if put in heat much earlier than this they get long and weak in the leaf stems, and in consequence they are unable to bear the least wind or rain.

The following good old varieties are most suitable for bedding, they always look well and form good contrasts: Beethoven, Wightii, Alfred Bleu, Myerbeer, Laingii, Bicolor splendens, Chantini, Donizetti, Triomphe de Exposition, Rouillard, E. G. Henderson and Argyrites. The last named variety makes a splendid edging, gives a fine finish to a bed, and it does remarkably well with me. I believe all the Caladiums will do well planted out with the exception, perhaps, of those with the yellow grounds. These are all very delicate, and I think would not stand out. I tried some of the new varieties last summer and they proved very satisfactory. The sorts were as follows: Jupiter, Monsieur A. Hardy, Leopold Robert, Clio, Anabel, August Lemoine, Cupreum, Madame M. Schaeffer and Perle de Brazil. These are very fine and effective either for pots or beds. Some of the corms of the above mentioned ones were six inches in circumference when taken out of the beds. I think this is a very good showing, considering they were only side corms when planted out. If these plants were given a place in the parks and some of the large private establishments, they would soon become general favorites. Outside of watering, they require very little attention.

Before concluding my remarks about Caladiums, I would like to mention what appears to me a somewhat extraordinary strong growth of five bulbs of *C. Chantini*; the five were grown in a

12-inch pot, three years consecutively; the circumference of the bulbs varied from eight and a half to twelve and a half inches, and their weight is two and a half pounds, avoirdupois.

Gardener to Mr. Clarence H. Clark, West Phila.

[The superior culture apparent in the exhibits of Mr. Warne before the Pennsylvania Horticultural Society gives additional value to this communication.—Ed. G. M.]

EXPERIENCE WITH BULBS IN SOUTH CAROLINA.

BY MRS. J. S. R. THOMSON.

P. H. Obberwetter suggests we report upon our successes and failures in acclimatizing exotic plants, bulbs, etc., which suggestion I meet with report of my failures this fall. Alas! how many successes to reward me I am yet to know. All of last year I was busy collecting bulbs, plants and tubers from Maine to California; also sent an order to Holland for bulbs with view of testing their suitability to this climate. Many I planted direct in open ground, but others, such as Freezias, Babianias, Lachenelias, Sparaxis, Ixias, Moreas, etc., I potted in large numbers, with this result—not one bulb left. Every one, even to Hyacinths, first froze and then rotted. Of every one potted under glass, but three Bermuda lilies and all of my varieties of Narcissus are gone; Cyclamens and Eucharis Amazonica also. In open air my *Galanthus nivea*, or snow drops, a new flower to me, is now, March 1st, in full flower. This spring beauty I think is overrated; with me stems are not two inches long, but its pearly whiteness and exquisite dainty beauty claims admiration. Roman Hyacinths did not freeze in pit or damage to any great extent. Those I have now both in pit and out doors in profusion. These potted bulbs were all stored in my old pit wherein I had not for years recorded any losses. In open air I planted *Alstromeria*, *Cooperia*, *Habranthus*, *Amaryllis*, etc., with result yet undecided. On January 9th to 12th thermometer registered 8, 10 and 12 degrees below zero, whilst to us the unusual sight was seen of young people skating on ice from 6 to 8 inches thick for full ten days. I am or was the happy owner of over two hundred named roses; all are more or less injured, whilst many are killed outright. Rustic arbors, which aforesaid were covered with *Marechal Niel*, *Marie Henriette*, *Salfaterre* and *Le Marquise*, all dead, whilst trellises look like hundreds of yards

of black wire was entangled upon them. *Euonymus* and wild orange hedges will have to be taken up entirely; but this state of affairs will not most likely occur again, the would be comforters will say; but who knows and who can tell why this awful devastating cold came now, which has so appalled and discouraged the dwellers of the "Sunny South?" Sunny South, indeed! we are more like the Polar regions, any way, this winter.

Spartanburg, South Carolina.

EDITORIAL NOTES.

CHIMONANTHUS FRAGRANS.—"This deliciously scented shrub has proved very disappointing this year, and instead of the large examples with which a portion of our walls are clothed being now sheeted with the soft yellow flowers, they present as miserable an appearance as they could do. In other gardens the *chimonanthus* is in much the same condition as it is with us, and therefore affords but little satisfaction. There was an exceptionally good display of flowers early in the winter, but the severe frost we had at the beginning of January completely destroyed them. The destruction is, indeed, more complete this season than for many years past, owing, as I believe, to the flowers being saturated by the rain and melting snow. I did intend protecting them with canvas when the severe weather set in, but so many other matters had to be seen to at the time that the *Chimonanthus* was overlooked, with the result here mentioned. Considering how very few flowers we have out of doors during the winter, it is rather surprising that some protection should not be afforded this shrub when in bloom. A coping of glass or canvas, sufficient to throw off the rains, and thus keep the flowers dry, would be better than nothing, but to thoroughly protect the bloom it will be necessary to provide sufficient canvas or other material to cover the whole of the tree, and to fix it in such a way that it can be readily removed in fine weather. The complete destruction of the flowers this season has induced me to resolve to take some steps for their protection in subsequent years, and I would advise other cultivators to do likewise."

The above is from a correspondent of the *Gardeners' Magazine* and is also a valuable hint for our readers, as, though a Chinese plant, it is entirely hardy in most parts of our country. If the branches be cut in midwinter, placed in water, standing in a warm room, they will open their buds and fill the whole house with a delicious fragrance.

COPPER BEECH HEDGE.—There is growing at Ashwelthorpe Hall, Norfolk (the seat of the Baroness Berners), a hedge of Copper Beech. It is

about 70 yards long, 7 feet high, and from 3 to 4 feet thick. It divides the kitchen garden from the pleasure grounds, and is both useful and ornamental. It requires but little labor to keep it in order, as it only needs trimming once a year. It was planted fifty-two years ago, and to all appearance will last another half century.—*T. B. Field in Garden.*

LAWN GRASSES.—People laugh at the one who buys "a pig in a bag," and yet they do just the same thing themselves in a variety of ways, and love to do it. If they are sick and require a few cents worth of ipecac or sarsaparilla they prefer to get it in the form of some celebrated "pectoral" or "universal remedy" at \$2 a bottle.

Horticulturists, much as they may be supposed to be protected by close contact with the simplicities of honest nature, are no better than other folks, and plank down their dollars for the few cents worth when a mystery is made of it, with a vim and an energy truly delightful. For years—for a quarter of a century—the **GARDENERS' MONTHLY** has shown that the best lawn grass is one kind of grass, pure and simple, that any one may buy for a few dollars a bushel instead of the most celebrated "mixtures" that may be offered at double the price; yet we find by a recent statement of Prof. Beal, that one firm of seedsmen sold last year "mixtures" to no less than 70,000 orders. It seems almost incredible; as the profits on "mixtures" are enormous, and one might soon beat Jay Gould or Vanderbilt on a trade like this. A quarter dollar net profit on each order would make \$16,500—a nice "penny" on one item alone in these hard times. Now Prof. Beal shows that there is more profit in it than this. By getting the "mixture" and analyzing it he found that it was made up chiefly of Kentucky Blue and Red top or Bent grass, with a trifle of white clover. The Blue grass is offered by the same firm for \$2.25 per bush.; the Bent grass for \$4.00 per bush.; but when the two are put together and it becomes the "celebrated mixture," it is priced at \$5 per bush.; so that what you pay \$3.12 for separately, together you pay \$1.88 more for. The 70,000 packages were not of course bushels, but when we see the enormous profit on a mere mixture, by the wholesale, we may judge of the enhanced sum on a package.

Our seedsmen friends will, we are sure, be very thankful to Professor Beal for making plain these facts to the people, for if our efforts in twenty-five years to get people to buy the one simple article

have resulted in getting 70,000 orders for mixtures to one single firm, Prof. Beal's experiments will probably result in doubling the number. Each firm dealing in "lawn grass mixtures" should send Prof. Beal a handsome fee for the service he has done them.

CEMETERY GARDENING.—In an admirable essay before the Massachusetts Horticultural Society, Mr. J. G. Barker gave his views as to the proper ideas to rule in cemetery gardening, which may be briefly summed up as follows:

"First—There should be perfect security and permanence in the title and against intrusion.

"Second—Insuring peaceful quiet and perfect repose to all who may be brought within the sacred limits.

"Third—The landscape should embrace a diversified surface of land and water.

"Fourth—The area should be covered with green turf in broad stretches.

"Fifth—Shaded by umbrageous trees, singly distributed at intervals or in open groups.

"Sixth—And reaching on either side to masses of foliage of different hues, deciduous or evergreen, according to the situation. The outside boundaries should be concealed by these, and at the same time, from various commanding eminences, open and unobstructed vistas across the demesne and to distant objects of interest, should be carefully preserved.

"Seventh—Easy access to all parts of the ground should be provided by smooth hard roads and paths, kept in perfect order.

"Eighth—Above all, we should enjoin severe simplicity and strictly good taste in the decoration of the graves and the mementoes offered to the dear departed ones.

"Ninth—In the modern rural cemetery we want no selfish repellent and obtrusive fences as enclosures to our lots, ever decaying and ever reminding us of the egotistical claims and pretensions of individuals in this common meeting place of rich and poor, where all of us, from the highest to the lowest, are at last reduced to a common level and to a condition in which there is and should be no respect of persons.

"Tenth—Lastly, and in connection with the sentiments already presented, as appropriate accompaniments and conditions of the sacred precincts of the cemetery, let us carefully avoid another great danger that is incurred in our desire to pay due respect to the memory of our dead; let us avoid making such a sacred spot appear to be only one vast advertisement of the stonecutter's thriving trade. Instead of the constant repetition of granite and marble, shaft and obelisk, or pretentious mausoleum or cenotaph, some persons will prefer to place a mass of native rock, partially faced for an inscription. Others, again, will prefer to mark 'the spot most dear of all the earth beside' by planting a memorial tree to mark the last resting place of their dear departed friends."

SCRAPS AND QUERIES.

MAGNOLIAS NEAR CHICAGO.—Mr. Douglas says: "One might infer from the remarks of the writer on Chicago and St. Louis Parks, that he did not think *Magnolia acuminata* and *Liriodendron* hardy in Chicago. I have both these trees on my lawn, where they have stood over 20 years, and have been perfectly hardy after the first three years after planting. They are fine specimens, thrifty and fine."

[We may add that Waukegan is a few miles northwest of Chicago.—Ed. G. M.]

HARDINESS OF THE GLADIOLUS IN NORTHEASTERN TEXAS.—Mr. D. H. Watson, Brenham, writes: "I have just read the interesting letter of Mr. Obberwetter in the March number of the MONTHLY, and I beg to differ with him in regard to the hardiness of the *Gladiolus*. Here with us

I don't think the *Gladiolus* could be desired to thrive any better than they do. We have some, the bulbs of which were planted several years ago, and they are just as good, produce as fine flowers, and are as thrifty as when first planted. We give them no attention at all, never think of watering them, and give them no protection. The only culture they get, is when we clean the weeds and grass away from them. They multiply rapidly and seem as much at home as if they were natives of the soil. I find that the original bulbs were planted about 15 years ago."

[The *gladiolus* is probably much harder than many people suppose. *Gladiolus communis*, a native of the south of Europe, has endured the winters of many years past in the vicinity of Philadelphia, and the kinds that have produced the garden hybrids, are natives of similar regions.—Ed. G. M.]

GREENHOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

BAD PUTTY.

BY R. S.

Your correspondent, "Hudson, N. Y.," in the February number of your valued magazine, relates his experience, and asks, "Will some one explain how this putty is adulterated?" I know nothing of the particular batch he became the unfortunate possessor of, but have no doubt it was such as is made and sold in large quantities, at the present time, by those who set a higher value on a money profit, than they do upon a good, honest reputation of character.

Having been a manufacturer of paints and putty for the past 50 years, I claim to know how they should be made.

True putty consists of thoroughly well-dried whiting and linseed oil—nothing else. To me, it is a gratifying fact, that this is the only formula I have used. The sharp competition of these days, the great tendency to cheapen everything that is sold, has led even the manufacturers of putty to

produce an article at less cost; and they have succeeded by the use of finely ground marble, white clay and lime-water, with a portion of oil (either linseed or menhaden), in producing, at little cost, a compound which they call putty, and sell for such. This marble dust putty has but little adhesiveness, and is quite unfit for glazing, as it is sure to drop from the sash. But, even if it did not, there would be no economy in its use, it being much heavier than true putty, *i. e.*, the genuine, old-fashioned whiting and linseed oil article; a vessel which would be filled with 100 pounds of this, would hold from 130 to 140 pounds of the marble dust article. Common lime-water mixed with linseed oil, in the proportion of 3 or 4 parts of lime-water to 1 part of linseed oil, forms a saponaceous mixture, used instead of pure oil in making cheap putty, and it is believed also in the manufacture of cheap paints, which "perish (almost) in their using."

Just at this moment, a circular setting forth the advantages of using an "improved paint oil," has been placed in my hands. A single extract from this circular will suffice: "Live and energetic

dealers in paints and oils, will find it a profitable oil to handle" * * * "half the price of linseed oil."

As long as people will insist upon having goods for less than their value, they may look for these cheapening adulterations. *Philadelphia.*

DENDROBIUM FIMBRIATUM.

BY ALPHA.

The fringed *Dendrobium*, *D. fimbriatum*, is a rare and singularly beautiful epiphytal orchideous plant. It is a native of Nepal, where it was discovered by Dr. Wallich and by him introduced into England in 1828.

It bears dark green lanceolate leaves, and the very splendid rich yellow flowers are produced in many flowered racemes, and the graceful manner in which they are disposed, renders the plant a very beautiful and attractive object. The sepals and petals of the individual flowers are, when carefully examined, found to be very beautiful, and of a rich orange color, the petals being waved and slightly fringed, while the hollow and undivided lip is margined with an irregularly torn fringe.

The plant can be easily cultivated by placing it in a wooden basket filled with sphagnum moss, intermixed with bits of charcoal to secure efficient drainage, or else the plant will not thrive. The plant should also be elevated some two or three inches above the top of the basket, in order to protect the young shoots from injury by damp. The basket then can be suspended from the roof of the house, and during the summer, which is its season of growth, it should be given a moist atmosphere and an average temperature of 70° or more if possible. As soon as growth ceases the temperature as well as the supply of moisture should be gradually reduced. In the winter it requires an average temperature of about 55° and only enough moisture given to keep the plants from becoming absolutely dry, and in the spring both heat and moisture can be gradually increased.

If the plants, when in bloom, can be removed to a cool but dry atmosphere, and a little care exercised as to keeping the roots moist, the flowers will retain their beauty for a considerable length of time. Propagation is effected by a careful division of the plant, and this operation should be performed just before the plant starts into growth.

The generic name is derived from "dendron," a tree, and "bio," to live, in allusion to the habits of the species which grow and entwine themselves

about the branches of trees in their native home; while the specific alludes to the fringed labellum of the flower.

STREPTOSOLEN JAMESONII.

BY VALENTIN BURGEVIN.

Streptosolen Jamesonii, a rather new appearance in the floral kingdom, is receiving a welcome from all lovers of flowers, on account of its peculiar color and form. Well cultivated specimens of it in bloom, I dare say are among the greatest ornaments in our greenhouses; it certainly will be liked, and will undoubtedly be an indispensable addition to a good collection of flowering plants in winter. But as it is not generally known, and it may not be known just how to grow it satisfactorily, so as to show its character, I intend to offer my experience for the benefit of all interested in growing plants. I set out some young plants from cuttings in May, in the open air, which soon grew to be bushy plants. I pinched them in, with the idea of making them stronger and more perfect, which operation we perform on *Bouvardias*, *Chrysanthemums*, *Heliotropes*, *Stevias*, *Eupatoriums* and many other plants; but I made a mistake. Some of my *Streptosolens* I did not pinch in, but left only three or four shoots, which grew quite strong, from $\frac{1}{2}$ to 3 feet high. They were potted in September, in rich loamy soil, and, on account of their many fibrous roots, soon started to grow again, and in about two weeks were brought to a sunny exposure in the house. With proper repotting and a moist temperature, from 50° to 60°, they develop their beautiful numerous clusters of orange yellow, tubular flowers, clusters almost as large as *Hydrangea*, commencing to flower the latter part of January, and continuing to May. They offer a precious show of charming blooms, far more perfect than the ones that have been pinched in. The shoots intended to bloom need the whole season's undisturbed growth. Nature not having provided them with stalks quite strong enough to hold up their exquisite heads, the principal points in their cultivation are to leave a limited number of shoots, and to skilfully aid them by proper supports. Judging from its excellent qualities, the *Streptosolen Jamesonii* will be, in all probability, a favorite with every cultivator of this class of plants.

[This pretty plant is a near relative to the well-known *Browallia*. Indeed, we believe it has *Browallia Jamesonii* for a synonym.—Ed. G. M.]

EDITORIAL NOTES.

THE DANDELION AS AN EARLY WINDOW PLANT.—Admiring a pretty collection of pot plants in a lady's window recently the question was asked which she admired the most. It was a surprise to learn that it was the Dandelion. She had one potted in the fall, and every day when the sun shone it put out a wealth of golden blossoms. And it was so easy to get to grow and to bloom. After all, common as the Dandelion is, there are few plants that can rival it in beauty and general interest. Not only our lady friend, but poets of high rank have sung its praises. We are reminded, while writing, of the pretty verses of Lowell which will meet a response in many a breast—

Dear common flower, that grow'st beside the way,
Fringing the dusty road with harmless gold;

First pledge of blithesome May,
Which children pluck, and, full of pride, uphold,—
High-hearted buccaners, o'erjoyed that they
An Eldorado in the grass have found,

Which not the rich earth's ample round
May match in wealth,—thou art more dear to me
Than all the prouder summer-blooms may be.

How like a prodigal gold, nature seem art,
When thou, for all thy gold, so common art!

Thou teachest me to deem
More sacredly of every human heart,
Since each reflects in joy its scanty gleam
Of heaven, and could some wondrous secret show,

Did we but pay the love we owe,
And with a child's undoubting wisdom look
On all these living pages of God's book.

A PURPLE CALLA.—Some talk has been had about a purple calla, or *Richardia*. There is no such thing. *Arum* *Palestrina* is purple, and this is the plant intended, but there are plenty of purple *Arum*. The *Arum* *maculatum* of English hedge rows—the “lords and ladies” of the peasants—has purple spathes, and our own Indian turnip is often purple.

PUTTY.—Those who worry about putty for greenhouses should remember that it is wholly out of date. The best greenhouse builders never think of it. Glazing without putty is the order of the day.

DWARF AMARYLLIS.—Those friends who are calling attention to the merits of this exquisite tribe of flowers, are doing good service to flower lovers. Recently we saw a very pretty kind in the window of a lady, that had a flower-scape of about a foot high, and had four large flowers on the two scapes. These flowers were about four inches over, and of a reddish orange, with a green “star” towards the base of the perianth or flower cup. The upper (broad) divisions were recurved, the lower (the central one very narrow) not recur-

ing, and hence giving the flower an irregular form, rare in *Amaryllis*. It is evidently one of the many varieties of *Hippeastrum* *bulbosum*, and perhaps the one once known as a distinct species under the name of *Amaryllis* *rutila*. Flowering as this does in March, it is just the kind of plant to be desirable for window plant growers. We do not know that it is to be had in the florists' trade, though our lady friend thinks among amateur gardeners it “ought to be common enough.” Its native home is Brazil.

CERATIZAMIA MEXICANA.—The whole family of Cycads, of which the Sago-palm is a well known illustration, is very much appreciated by those who love ornamental foliage plants around their homes in summer, and as they are of very slow growth large specimens always have a high value. They seldom flower under cultivation, and hence when one does it is always an object of great interest to all “neighbors and friends.” One of these events in the Germantown neighborhood during March was the flowering of *Ceratozamia* *Mexicana* under the management of Mr. A. M. Lawton, the intelligent gardener to H. H. Huston, Esq., who is adding to his garden attractions quite a number of greenhouses and many rare and interesting things.

SCRAPS AND QUERIES.

POINSETTA CULTURE.—“A lady” desires to know how best to grow Poinsettias. If very large bracts are desired, the plants may be cut down in early spring. As soon as they have pushed a little, shake out of the old pots, and reset in as small pots as the roots will grow in. As soon as they get established in these, repot in an eight or ten inch pot, and set in the full sun and give plenty of water during summer; early in the fall take to a warm house. A temperature of 70° gives the best results. Whether large or small plants are desired, they take a good heat when flowering, as well as when growing, to get the best results.

PROPAGATING ACACIAS.—A correspondent inquires “the best way to propagate the New Holland Acacias, some of which are so much used in cut flower work.” She probably means *Acacia* *pubescens*. But this and all others are easily raised by cuttings of the roots, the same as *Bouvardias* are raised. Seeds can often be had, and grow easily.

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

Whoever grows wheat or any other farm crop, knows that the soil will not maintain its fertility without manure. He knows that however rich a virgin soil may be, it cannot long remain rich without his artificial aid. Hence, an annual manuring becomes, in time, as necessary as an annual sowing of seeds. How few remember this in orchard management. The tree has to flourish in the same soil for years,—or perchance after all the best of the soil has been taken away by regular farm crops, and then comes the "Wonder why our climate will not grow trees as it once did." Soils cannot well be too rich for fruit trees; not to have manure dug deeply in, but spread on the surface. Possibly we suffer more from the apple and plum borer than we one time did, but these are so easily kept out by oil paper about the collar of the tree, that excuses for not raising fruit, on account of injury to the trees by borers, is only exhibiting one's laziness. Fire blight and plum knot may be easily kept under, and the curculio "fixed" by Hull-catchers. The codlin moth may be pretty well kept under by persistence in destroying wormy apples, so that with the exception of leaf blight and injuries from frost, there is really no formidable obstacle to the way of successful fruit growing. Leaf blight is not yet mastered. If it is true, as appears probable, that the fungus which produces the effect we see, can only germinate in a high temperature, we may, by taking steps to keep the great reflection from our summer sun parched soil from operating on the leaves, yet master this last great evil.

Grapes in cold vineries will now be of a size fit for thinning. In those cases where the bunches are intended to hang long on the vines, they should be thinned out more severely than those expected to be cut early. A close, compact bunch favors mildew and early decay.

Fine, rich color is always esteemed as one of the criterions whereby to judge of the excellence of a fruit. Sun light is of first importance; but it is not generally known that this is injurious when in excess. In a dry atmosphere, with great sun-heat, where the evaporating process goes on faster than the secretive principle, what should be-

come a rich rosy blush in a fruit, is changed to a sickly yellow; and the rich jet black of a grape becomes a foxy red. Some grape-growers of eminence, in view of the facts, shade their vineries during the coloring process; but others, instead, keep the atmosphere as close and moist as possible. The latter course detracts from the flavor of the fruit. The best plan is that which combines both practices.

Watch newly planted fruit trees. If they have but a few weak leaves only, it shows the roots have been injured; then prune them severely, which will make them grow freely. It should be a main object to make all transplanted trees not merely have leaves, but have new shoots at the earliest possible moment. If they are growing very well, they may be allowed to perfect a few fruit. Overbearing on a newly planted tree is, however, one of the best ways of making it stunted for years.

Strawberries, when in grown hills,—the most laborious but the most productive method of growing them,—should have runners cut off as they grow, and the surface soil kept loose by shallow hoeings occasionally. Short litter, half rotten, as a mulch, is also beneficial. Lawn mowings are often applied, but with little benefit. Where they are grown in beds, they should not be too thick, as they starve one another, and the crop next year will be poor.

Blackberries are not always ripe when they are black. Leave them on till they part readily from their stalks.

Gooseberries should have the soil, and even the plants, if it were practicable, shaded a little. Dry air about them is one great cause of mildew.

Peas for a fall crop may be sown. It is, however, useless to try them, unless in a deeply trenched soil, and one that is comparatively cool in the hottest weather overhead, or they will certainly mildew and prove worthless. In England, where the atmosphere is so much more humid than ours, they nevertheless have great difficulty in getting fall peas to get through free from mildew; and to obviate these drying and mildew-producing influences, they often plant them in deep trenches, made as for celery, and are then much more successful with them.

Cabbage and Broccoli may still be set out for fall crops, also requiring an abundance of manure to insure success.

Lettuce, where salads are in much request, may yet be sown. The Curled Indian is a favorite summer kind; but the varieties of Cos, or Plain-leaved kinds, are good. They take more trouble, having to be tied up to blanch well. Many should not be sown at a time, as they soon run to seed in hot weather.

Endive is becoming very popular as a winter salad. Now this is the time to sow. The Curleaved is the most desirable. Sow it like Lettuce.

Celery for early use is often planted out this month, though for winter use July or August will be early enough. It is best to set out in shallow trenches, for convenience in watering, the celery being fond of hydropathic appliances. If the ground has been deeply subsoiled, and the subsoil well enriched, the trenches may be near a foot in depth, for convenience in blanching; but beware of planting down in poor, barren subsoil. Many plant in double rows. Where very superior celery is not an object, this will do, but the single row system is the best for excellence. The season is now arriving when the advantages of subsoiled ground will be apparent. In such soil plants will grow freely though there be no rain for many weeks. Some of our best growers now plant entirely on the surface, and depend on drawing up the soil, or the employment of boards or other artificial methods of blanching.

Cucumbers for pickling may be sown this month.

Parsley for winter use may be sown now in boxes of rich soil, and set in a cool, shady place till it germinates.

Asparagus beds should not be cut after the stalks seem to come up strong, or there will be but a poor crop next season, and the beds will "run out," in a few years.

The Swede Turnip or Ruta Baga should be sown about the end of the month. A well-enriched piece of ground is essential, as by growing fast they get ahead of the ravages of the fly. Manures abounding in the phosphates—bone-dust, for instance,—are superior for the turnip.

Sweet potatoes must be watched, that the vines do not root in the ground as they run, which will weaken the main crop of roots. They should be gone over about once a month, and with a rake or pole, the vines disturbed somewhat from their position.

COMMUNICATIONS.

THRIP IN GRAPERIES.

BY A. H.

I thank the contributors at pages 78 and 109 of the GARDENERS' MONTHLY, for suggestions on the subject of thrip, in reply to my article on page 18.

As my grapery is a cold one, where fire is not used in a stove more than half a dozen times early in April, I have no heated pipes on which to apply sulphur and milk; and I have had experience enough with sulphur, both burning or simply heated, to know how much, or how little, under circumstances, it will accomplish. I have stonewalks in my grapery and at periods when the insects can be stupefied and made to drop down, the use of a broom as recommended is a proper one; a great many of the thrip can be thus destroyed. I always have my vines trimmed fully in the fall, which I deem much better than pruning in the spring; they are also more easily covered after pruning; they are well washed with tobacco water and sulphur to keep off mice; the larger stems are wrapped with straw and the branches bent down and covered with leaves. About the 10th of April, they are uncovered, washed with soap-suds, suspended, heads hanging until the buds begin to swell, and then tied up.

The wire cup, with paper soaked with kerosene ignited, if handled properly, does less harm, and accomplishes more than it gets credit for at page 110. It destroys thousands of the insects in the autumn whose progeny would otherwise next year amount to millions.

Meadville, Pa.

MANAGEMENT OF GRAPEVINES.

BY J. GARDNER.

I am in charge of some twenty acres of vineyard, therefore am asked a great many times what is my experience with bagging grapes as a preventive of grape rot. I say bagging is a perfect nuisance, so far as my experience goes. Again, many ask, what is the cause of grape rot? I also have asked that question, but nobody seems to know, so I thought I would come to you for your opinion; also to give mine. Now, I have been in charge of this vineyard twelve years, and at one time had some three hundred varieties of grapes in it. Out of all these only eight varieties were subject to grape rot, and these have rotted but four years out of twelve, and then only when the thermometer has gone 12° to 15° below

zero. The summer following such cold I notice the grape rot is sure to make its appearance.

Now, I claim that the freezing of the old wood is the cause of grape rot; for instance, if you look around you will find most of

the vines are pruned as is Fig. A, others again are pruned with more old wood exposed, as in Fig. B.

I find that so much old wood exposed to our severe winters is more than our vines will stand; that is, in localities where the thermometer goes 12° to 15° below zero.

Now, if you cut through some of the old exposed wood you will find it is black from being frozen. My opinion is that the sap passing through the partly decayed wood is the immediate cause of grape rot. For example, last summer I had in the same row vines that were pruned as in Fig. C,

and covered over with some light manure last winter, that had not a particle of rot, and they ripened five days earlier than the vines

pruned as in Fig. D, with the old wood exposed to frost, while the vines pruned with so much old wood exposed were badly injured by the rot. Now, Mr. Editor, if you or any of your numerous readers of the GARDENERS' MONTHLY have had the same experience, or any other, I shall be glad to hear it through the MONTHLY.

With Ellwanger & Barry, Rochester, N. Y.

(From a letter to a friend.)

FLORIDA ORANGES

BY LEWIS MAROT.

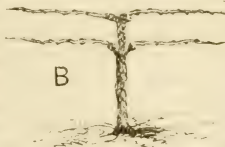
With the exception of 100 oranges sold in the store, those two boxes were all I got from my grove, out of about 3000 which the trees bore. My neighbors in Tangerine have a feeling that

whatever grows on my place—lemons, oranges, guavas, or melons—they have a common interest in, and in accordance therewith enjoyed all these things while they lasted. I had hard work to save the two boxes. I instructed my Philadelphia doctor, C. C. Bolles, living on the adjoining ten acres, to keep two boxes hanging on the trees until they got to their highest point of excellence. He labored diligently to that end, and when the two boxes were picked there were none left. They were my first offering from a grove of my own planting and raising. The high appreciation of this "offering," coming from those with whom the happiest period of my younger days was passed, more than compensates for all the toil and expenditure of raising the grove, had it been ten times as great. I designed, by letting them hang as long as possible, to have them true to the name of "Florida oranges." A large portion of our fruit is shipped before maturity, and I am glad I was not disappointed in the result. This was before the freeze. This fall I hope to send you more of the same sort, from the same trees that stood a test of cold never before experienced in this section— 18° above zero.

But before many days, I will send a box of blossoms, from the same trees, that will put to blush the liars of the North that are persisting in doing all they can against the State, by proclaiming that "Florida has been frozen out, and that all the orange trees are killed!"

The damage to the orange tree is comparatively small, and in many sections the trees are still hanging full of delicious oranges that were untouched by the cold, and the groves as bright and beautiful as ever. It is not to be wondered at that the impression should have gone abroad that the State was irredeemably ruined; for many of our people felt that way on the morning of the third day of bitter cold. But that they should persist in it, after abundant evidence to the contrary, is strange indeed. The prices of land and groves have not been depreciated, but on the contrary, in many sections, have been enhanced, from the fact that the trees will bear so much cold.

The planting of new groves is going on all around, from young trees that stood in the nurseries unprotected from the cold. The loss of the oranges will be sadly felt. One of my neighbors lost 1,500 boxes—had not picked an orange for shipment. The whole lot was contracted for at a good price, packed and delivered at the station; shipping to commence a few days after the date of the freeze. I have about 4,000 young trees in the



nursery, that are generally growing nicely. A few small and weakly trees were killed. I have sold one acre of land since the freeze at \$60. Pretty good price for a "dead country." I was appointed by the county court, to appraise an estate, a few days ago, and twenty acres of land was appraised at \$2,000. What do you think of that for a dead country?

Business has been very dull here for some time past, but as much in sympathy with the business of the North as from cold. In McDonald we have one good-sized house going up, and four others planned, three of which are to be worth from \$1,500 to \$2,500. A new station has been located a short distance from us, a depot going up, and about fifty or sixty acres being set out in orange trees.

Next fall will probably bring us the largest influx of visitors we have ever had. The travel this way is now increasing, and things are shaping for rather better times, though the change will be gradual—probably may be worse before it gets better. But a booming crop of oranges this fall, as is shown by the condition of the trees, will set things in good shape, and more money will be invested here next winter than ever before. The increase of patronage at the Jacksonville hotels, has been at the rate of from 6,000 to 8,000 the past five years.

There are now several millions invested in hotels in Florida, and some of the houses have all the conveniences of Northern ones.

McDonald, Orange Co., Florida, March 9th, 1886.

A NEW SPECIES OF GRAPE, AND THE SCUPPERNONG.

BY T. V. MUNSON.

Recently I have identified a distinct species of grape, first discovered in Florida by a Mr. Halsey, about 1830, and sent to Rafinesque who described as follows:

"Vitis Floridana, or peltata (Raf.), Florida Grape.—Petioles short and smooth; leaves drooping, ovate-cordate, acute (in outline); base subpeltate, split acutely, lobes approximated; teeth all round large, acute incised, straight-sided. Surface smooth and green on both sides; beneath nerves reticulated prominently, with bearded axillas. Leaf very small $1\frac{1}{2}$ inches long, by one broad; petiole half as long as leaf. The prominent network of nerves beneath, instead of veins, as usual in other species, is peculiar. Fruit unknown."

Since Rafinesque's time this species has re-

mained unobserved, or else confounded with *V. rotundifolia* by botanists. Even Dr. Engelmann seems to have had no knowledge of it.

Recently Mr. J. H. Simpson, of Manatee, Fla., an excellent amateur botanist, has re-discovered it in Manatee county, Fla. I last year received leaves of it from Lake Jessup, Fla., but took them to be of *V. rotundifolia*, till lately, having received fruit from Mr. Simpson; I at once saw we had an entirely distinct form, though closely allied to *V. rotundifolia*. The cluster is about the same size as *V. rotundifolia*, the berry only one-third to one-half the diameter, with skin thinner and tenderer; seeds small, one-third to one-quarter the size in bulk of *V. rotundifolia*. Fruit more acid with much less pulp. Wood warty and tendrils simple as in *V. rotundifolia*, but the cuttings, as tried by Mr. Simpson, grow very easily, while those of *V. rotundifolia* will scarcely grow at all. It seems to be confined to the southern portion of Florida. Mr. Simpson finds this species common in Manatee county, while the *V. rotundifolia* is not found. The two species seem to blend into each other coming northward from the Manatee River. This makes the number of species of American grapes, worthy of such distinction, sixteen, and puts two species into the warty wooded, simple tendriled group, instead of one as heretofore.

Just at this point let me make one point clear as to Scuppernong and Muscadine, or rotundifolia grapes, in the South. Generally it is understood that when the term, or phrase, Scuppernong grapes, is used, that it applies to all cultivated varieties of *V. rotundifolia*. The unguarded use of the term, as in Mr. H. W. Ravenel's "History of the Scuppernong Grape," (GARDENERS' MONTHLY for August, 1885, p. 238), wherein he says, "All the cultivated Scuppernong vines now in existence are parts of that original vine found in N. C.!" leads to confusion unless this is to apply purely to that variety very commonly called Amber; then he is correct. Scuppernong is one of the common names for this class of grapes, along with Muscadine as another. However, it would have avoided the danger of confusion if Amber had been used, as it applies to no other of this class or species. There are other varieties of this species (*V. rotundifolia*) in cultivation, all or nearly all of which have been found wild in one or another of the Southern States. Pee Dee is another of same color as Amber, but later. They are not amber, but of a dull rusty yellow. Thomas, Flowers and Tenderpulp, all black, are

other varieties favorably known and largely cultivated. Flowers is the best to my taste of the lot. All varieties of this are entirely free from every form of disease affecting other species.

Denison, Texas.

[As to what is a species or what a mere variety among grapes, there will be a difference of opinion even among eminent botanists. In regard to this, it is enough to say that few persons have given such close attention to the study of the grape as Mr. Munson, and his views will therefore be received with great respect by botanists generally. —Ed. G. M.]

REMEDIES FOR PEACH TREE BORER.

BY ERNEST WALKER.

To my item "Tobacco Stems and Ashes," page 323, November GARDENERS' MONTHLY, 1885, which I chanced across in reviewing some of the back numbers of the Horticulturist—as is my practice to occasionally do—the Editor appends a note which suggests the form in which I should perhaps have made my statement, as I am not certain that ashes do positively destroy the borer, though I had some grounds for thinking so, and in my article only expressed my conviction.

I had experimented in casting clammy skinned worms in tobacco and wood ashes. Fresh tobacco ashes are the stronger, containing more and purer potash. The common "earth-worm" placed in it would writhe frantically; the skin would grow dark and give out a watery excretion. The ashes adhering in this would soon coat the worm from "head to toe" with the burning plaster. The skin now exhausted of its fluid secretion became dry and darker, and in a few minutes all struggles were over. In weaker ashes the results were similar, but prolonged in proportion to the strength of the ashes. Hence the value and use of dry ashes for dusting cabbages troubled with worms.

Now, when ashes are placed around the root of a peach tree, to the borer it is in all probability a repetition of the history of Pompeii, but in addition to this the rains dissolve the alkaline principle and flood the floors of his little domicile, so that instead of wallowing in the dust he bathes in the burning fluid. Weaker ashes would not have the same active effect I first mentioned in the experiment, but the skin of the borer is tender and very susceptible to tanning; his mouth and stomach are more tender, and could scarcely endure the draught he would be compelled to take in "a bath;" at the same time the bark, his food,

is rendered unwholesome for the time by even the weaker alkali.

It would not be advisable to place the fresh ashes about the roots of the tree, but ashes partially leached by exposure for some time to rains, placed about the collum of trees and shrubs subject to borers, cannot injure them, and proves decidedly beneficial. At the meeting of the Indiana Horticultural Society, in 1883, I believe, this subject came up between some others and myself privately, I suggested this remedy, when a gentleman immediately ejaculated, "There! you've hit it; that's the best thing I know of, and works every time," and subsequently related his experience thus: "Several years ago I planted out several thousand peach trees. They did little good for several years. I discovered the borer to be at the bottom of the trouble, and forthwith catching a hint as to the virtue of ashes I distributed the heap lying in my stable yard among them, placing a little mound about the stem of each tree. The trees revived and have not been troubled with the borer since, and to-day are healthy and yielding profitably."

Another peach orchardist residing near New Albany, Ind., related a similar experience, but used hot water instead. He applied this remedy in the latter part of winter, before the ground was warm, otherwise it might have been apt to scald the roots. Having heated a large kettle full of water, he passed through his orchard of some thousand trees, pouring a quart around the collum of each, and claimed his trees have since been perfectly healthy and free from the borer.

New Albany, Ind.

FORCING STRAWBERRIES.

BY THOMAS FOULDS.

In the June number of 1885 appeared my query of growing strawberries under glass, which brought forth many responses, and many have been induced to try the experiment by reason of this correspondence.

I presume you will admit me to answer inquiries through your valuable MONTHLY; if so, I will be as concise as possible. Take up good strong runners as early as may be in the spring, plant them in boxes 3 feet long, 6 inches wide and 6 inches deep, bottom perforated with holes to secure good drainage. Fill with well enriched soil; if heavy, add about one-fifth sand. In a box of such dimensions plant four. Place them on a layer of ashes or coarse material. Water when

necessary, not allowing them to get dry. Nip off the bloom and runners as they appear, and as they grow stronger, water occasionally with weak liquid manure, increasing to two or three times a week as the plants develop. By the middle of September they will have attained the highest point of growth for the season, when water must be given sparingly. If extreme earliness is desired, remove them into a position where 60° to 65° can be maintained during severe cold nights with the foliage well up to the glass. I consider the greatest importance to successful fruiting is light and heat. This will be, in our latitude, about the 1st of November. Give plenty of air on mild days, with increased temperature as they start in to action, say from 55° to 60°, and so on until the fruit is set, when on bright days 70° may be given with benefit. Frequent syringing is absolutely necessary as the growth advances, to keep down red spider. Watering with liquid manure will again be in order, until the fruit shows signs of ripening, when it may be withheld; regulate the size according to the quantity of the fruit on each plant. This year my plants were in bloom by the middle of January, and on Washington's Birthday picked ripe berries. My varieties are the Sharpless, Crescent seedling and Cumberland. The method is simple, and anyone may have them who has the facilities, and the best teacher is nature's own law. *Hoyt, Montgomery Co., Pa.*

SULPHUR, AN ANTIDOTE FOR THRIP.

BY CULTIVATOR.

Mr. Rhind, page 109, takes exception to my answer to "A. H.'s" inquiry for an effectual remedy for the destruction of thrip. Probably Mr. Rhind took my remarks, under the sense which the Editor points out as dangerous. If so, I quite agree with him, that anyone using sulphur in such a manner would be sure to come to grief. But in all my experience with it (yet I am open to conviction and invite criticism) I have never known it to be in any way injurious to vegetation, when applied to hot-water pipes. In regard to its efficiency for destroying thrip, I can only say, that I have annually kept large ranges of graperies, clear of both thrip and red spider, through the persistent use of sulphur, applied to the hot-water pipes as described in my answer to "A. H." But let me not be understood to mean, that one application is going to keep the graperies clear of thrip, for the entire season, for it will not, no more than one fumigation is going to keep a rose-house clear

of green fly. It is easier to keep an army at bay than to turn it out after it has taken possession. So, my motto always is, to keep such enemies at bay, never let them get a firm footing. In this lies the secret, if secret there be, of successfully contending with the numerous insects which attack hot-house plants in general. Anyone with experience, knows how much easier it is to keep a house clear of green fly than it is to get rid of it after it has gained a footing there. I have always found a well balanced atmosphere, in regard to heat, moisture, and air, a powerful agent against the encroach of thrip and red spider.

Mr. Rhind's plan of cleaning off the rough bark and painting with such a mixture as he describes, is excellent; in fact, all well-kept graperies should undergo such an operation annually. I do not wish to discourage Mr. R., but perhaps I may be allowed to state, that I know of a graperies 60 feet long "lean-to" with a 25-foot rafter, in the centre of which is a single vine of the variety known as White Tokay and filling the whole house. This was planted in the year 1783, and has, I believe, undergone the operation of bark-ing and painting annually ever since; and yet it was in this same graperies that the writer was first impressed with the efficacy of sulphur "vapor" as an antidote for thrip.

South Virginia, April 8th, 1886.

EDITORIAL NOTES.

CLOSE PLANTING OF GRAPEVINES.—How theoretical reasoning is often upset by practical experience is well illustrated by California grape growers. The late Mr. Briggs thought that vines planted 12 feet apart would make better fruit than closer, but it is found by results that when closer planted the saccharine matter is increased.

THE EVERGREEN BLACKBERRY.—Botanists know well that there is no "native blackberry in the Sierra Nevadas" fit to eat, and others who are not botanists know well that this so called "Evergreen" "Nevada" blackberry is only a variety of the English species known as *Rubus fruticosus*. But some of our Pacific friends who do not know as much as they will some day are indignant at the Eastern papers for telling them the truth. At a recent convention, reported in the *Oregonian*, Mr. Manning, an architect of Portland, but an excellent amateur gardener, said:

"They are as genuine an evergreen as the pine or fir, the leaves remaining on the whole year,

making them very ornamental, and they make as nice an arbor for winter as the grape does for summer." He adds: "It is ridiculous to compare them to the old cut-leaf blackberry, for one bush of evergreen will produce more fruit than ten acres of the other, and I am surprised at the *Rural New Yorker* referring to them as such." They will stand the Colorado or any other climate. A. J. Fix writes that the blackberry in question "is as much an evergreen as the pine or anything else." Mr. Offner says, "they make a growth of from twenty-five to thirty feet in two years and are loaded with berries the full length."

It will perhaps be news to these friends that this species is "evergreen" here in Philadelphia when the foliage gets under the snow as much as it is in Oregon.

POTATO, CHARLES DOWNING.—New and promising potatoes continue to be born, but hope seems too often to get an early frost that blights it in the bud. Charles Downing is the new star in the East. It is said to be as early as Alpha, productive as White Elephant, and as agreeable as Snowflake. "Long may it wave."

ENDIVE CELERY.—A kind of celery that grows

in dense tufts like Endive has appeared in France. The leaves are so numerous, and grow so thickly together, that they shade the leaf stalks, and the plant is thus self-blanching. It could probably be aided in this by tying a little, or placing a board over as in endive.

SCRAPS AND QUERIES.

PRESERVING HOT-HOUSE GRAPES FOR WINTER USE.—A correspondent from western Pennsylvania says: "My crop of grapes from under glass turned out better than I expected, and we have the last of our Black Hamburgs and Muscat of Alexandria grapes on our table to-day, in honor of a deceased parent's birthday. This fruit has kept in an upper room, laid on wrapping paper, and well covered with the same. Though somewhat shrunken, both kinds are fresh and quite palatable, with very little culling out. The ripening of the fruit and its keeping so well, I attribute largely to thorough thinning at the proper season."

FORESTRY.

COMMUNICATIONS.

FOREST CONIFERÆ OF THE ROCKY MOUNTAINS.

BY ROBERT DOUGLAS.

Referring to specimens of *Pinus ponderosa*, page 113, April number, *P. ponderosa*, sent me by Mr. S. B. Higginson, Gordon, Nebraska, are in no way different from the species as found in the foot hills from New Mexico to Montana. This same tree, as found in California, where it reaches its greatest development, has leaves a foot long, and very large cones. In the foot hills on the eastern slope of the Rocky Mountains, and well up into the mountains toward the north, its leaves are from 3 to 9 inches long, according to exposure and quality of soil in which it is growing. I have had three different specimens sent me in the same package, from a gentleman in the Black Hills, as three different species of pines; but they were all the same. The gentleman replied, telling me that I did not know anything about pines.

When exploring in the Black Hills a year or two afterwards, I inquired of gentlemen who were said to know the most about the Black Hills conifers, and was sent to different points to find the different kinds of pines, which went by different names, but found them all to be the same. No wonder they were called by different names, and supposed to be different kinds, for at different ages the tree has a different appearance. We found large forests of tall, slender, blackish-barked trees. Other forests, all of a more spreading habit, with their brown or cinnamon colored bark. Finally, the fine species of pines that we went out to examine, after so many laborious days' travel, all proved to be *Pinus ponderosa*. This Black Hills country must have been subject to forest fires before the white man entered it, for undoubtedly fires were the cause of these forests being of different ages.

The Black Hills country resembles the hilly part of New England more than any other country I have ever seen, and you can imagine one of these hills having been swept by fire, say twenty-

five or thirty years ago, and not a tree left except on a broken spot here and there where the fire could not reach, and all this extent covered with trees of the same age; while beyond the stream, where the fire could not reach, are the older trees, quite different in appearance; for you will bear in mind that in this Black Hills country, or at least in some parts of it, the trees spring up as they do in New England, or in a moist climate, differing wonderfully from Colorado in this respect.

Pinus ponderosa owes its reputation to the California tree, where it is said to produce excellent timber; but the Colorado tree has no such claim. Prof. Sargent and I examined the timber in the carpenter shops in Leadville. In one shop we found some pine lumber that worked nicely, but they called it Chicago pine. That is the name they give the White pine, as it had come from Chicago, and carted up to Leadville after it left the railroad, as the railroad did not reach there at that time. At Deadwood, in the large Homestake mines, they use the ponderosa and give it a poor reputation; but it is the only pine in the Black Hills. *Pinus tæda* would no more stand the climate in north-west Nebraska and the Black Hills, than a Florida orange tree would stand there; and *Pinus mitis* browns here every winter, and loses the last year's growth nearly every winter. *Pinus ponderosa* is a dangerous tree here, as the fungus on the leaves not only disfigures this tree, but "catches on" to the Austrian severely, and on the resinosa to a less extent. We burned every one we had on the place for this reason, and I do not know of a tree left in the west. The largest tree I ever saw under cultivation, was in the Cambridge botanic garden, and it was a miserable tree, with a very unsightly fungus on its trunk. If it could be grown healthily and thrifty, it would be a beautiful tree, but I do not think it can be on this side of the mountains.

Possibly I am prejudiced against this tree; very likely I am. It has cost me between two and three thousand dollars, and I know I will never get a cent back, and this will prejudice a fellow sometimes. You may know of some ponderosas in the East that are doing well, and making good healthy trees.

Waukegan, Ill.

EDITORIAL NOTES.

SIZE OF ANCIENT TREES.—How one may be deceived in evolving a chain of facts is evident from much that we read in scientific journals.

Here is an illustration. At Kinnared in Sweden a boat was recently dug out of a bog. It was a "dug-out," and six feet across the edges. From this the inference is drawn that the trees of that region "must have been 20 feet in circumference."

In Alaska the captain of our vessel gave us "half a day" to follow the receding Davidson glacier. The rest of the party took a round-about but water-worn way, but the writer of this thought he could save time by crossing the narrow but wood-covered peninsula that separated the glacier's track from our landing place. It was a mistake. The immense thickets of *Shallon* three or four feet high, and the terribly prickly *Panax horrida*, or "Devil's walking cane," took several hours to get through. It was worse than an Eastern blackberry thicket. The glacier's trail was reached, but that was all. The others got to the glacier's edge, but the unfortunate battler with woods had to stand the laugh of the more successful ones. But he had his reward. In his tramp through the woods he found a "boat yard." The Indians had all left to see the big ship and "trade," but there was their work in progress. The trees were of alder, which grow to an immense size for alders on the bottoms. The logs in preparation were not measured, but from memory were between two and three feet. But when finished were much wider than this. They were stretched apart. As was gathered from a half-breed afterwards, who spoke fair English, the logs after being hollowed, are filled with water. Red hot stones are then put in the water till the temperature is high. Then braces are wedged across, much as the butcher uses a gambrel to spread a sheep apart, and the boat remains in that form when it cools. Therefore the width of an Indian dug-out is no guide to the width of the tree that furnished the log.

EUROPEAN LARCH IN MASSACHUSETTS.—At a recent meeting of the Massachusetts Horticultural Society, Mr. O. B. Hadwen said that he set out some larches for ornament, and twenty-six years after he wanted twenty sticks of timber 8 inches by 10, and could not get them except by resorting to his ornamental trees, and accordingly cut out alternate trees. The larch makes very stiff timber, which cannot be sprung.

THE DISTANCE BETWEEN FOREST TREES.—In Europe, where one might suppose such a question would long ago have been settled, the proper distance to set forest trees is still a matter of dispute. If set very close they starve each other as the

food necessary for one has to be shared by two; on the other hand if trees be set very wide there is too much tendency to send food into side branches and the trunk is low; a tall straight trunk is very essential to good timber. If a tree could be wholly under a pruner's charge so that any very stout horizontal branches could be cut away, and the leader encouraged to grow strong and straight, there would be no question about the solitary tree having by far the best of it. But this sort of manipulation is out of the question in large forestry areas. It would not pay. The great object then should be to plant so closely that side branches will not be encouraged to any great extent, and yet not so closely that the trees will starve or smother each other.

TELEGRAPH POLES.—In England the Norway spruce is employed, known we believe in the English lumber market as "deal." Larches, of English growth, formerly employed, were found sadly wanting in durability. In America cedar is used where they can be had tall and cheap enough, but nothing is found better than chestnut, cost and durability both considered. Ten or fifteen years is the average duration of an American telegraph pole. The English are talking of iron posts, though it is conceded they cost four-fold those of wood.

BIRCH-WOOD FOR DOORS.—It is stated that Birch is a good material for doors. A gentleman recently had black Birch used for the folding-

doors of his new house against the architect's protest. The result has so far been satisfactory. The Birch in texture resembles Satin-wood, and is a dark cherry in color. The doors are admired by everyone who sees them. Although this is so, the question of durability still remains to be tested. Black Birch is not generally considered a lasting wood.

We believe the above useful hint from *Garden-ing Illustrated*, refers to our Sweet or Mahogany Birch, *Betula lenta*. Our *Betula nigra*, we believe, is seldom used and perhaps never exported.

THE AMERICAN WHITE OAK IN ENGLAND.—The *Garden* says that in England the American White oak grows faster than the English oak. This is remarkable, as in America, it grows slower than most oaks, and the reputation the oak has of being a slow grower, comes chiefly from experience with the White oak—*Quercus alba*. The most rapid of all oaks in the vicinity of Philadelphia, is the English oak. The leading branches always make two, and often three growths a season, and five feet is not uncommon for the annual growth of the leading shoot.

The *Garden* regrets the difficulty of getting acorns of the American White oak to England. This has always been a trouble. They bear freely only about once in two or four years, and sprout immediately on falling. If English planters want to try this plant in forestry, they should contract in advance of some fruitful season, with some American nursery to sow the acorns, and then ship the plants the next spring.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

THE BAG-WORM AND THE ELM-LEAF BEETLE.

BY PROF. S. S. RATHVON.

II.

The "elm-leaf beetle" is not so easy to manage as the "bag-worm," especially when the trees are very large and high, and the bark is rough. As you stated, in your reply to your correspondent in the January number of the *GARDENERS' MONTHLY*, there is very little use spending time in providing means to prevent these beetles from crawling up

the trunks and large branches of the trees, for they seldom, if ever, resort to that process of getting to their leaves. Notwithstanding their apparent sluggishness when partially chilled, or when very young, they soon become very deft flyers. On one occasion I gathered about two hundred of the pupæ at the base of an elm tree, and put them in a paper box, some 3 or 4 inches in length and about 2 inches deep. On opening the box three days thereafter, to notice what progress they had made in transformation, fully a dozen of them made their escape by flight, before I could close the box again.

I saw the first elm-leaf beetles (*Galeruca xan-*

thomalcena) in Lancaster county, at least ten years ago. They were brought to the March meeting of the Linnæan Society by Mrs. Gibbons, of Gordonville, and she reported that she found a large number of them behind the screen of a fireplace in her house. It is therefore certain that these beetles hibernate during winter, and that, for that purpose, they do not always go under ground or under the bark of trees. For the past four or five years, they have been exceedingly numerous and destructive in and about Lancaster city, and yet little or nothing has been done to arrest their progress, other than the cutting down of an occasional tree: and, perhaps, under the circumstances, nothing else could be done. When the larvæ (small bluish-black bristled worms) are fully matured, they desert the leaves and slowly crawl down the branches and the trunks to the ground, and if they found loose earth or grass there, they would no doubt pupate in them. But here in Lancaster city most of the infested trees had hard brick pavements beneath them. At such places, the seams between the bricks, the cavities around the bases of the trees, and the gutters, were conspicuously yellow with their pupæ—piled up on each other, and they were swept up and burnt and scalded by the pint measure; but nobody attempted to spray them. It seemed too big a job to spray great branching trees, 30 or 40 feet in height; and yet where the trees are small, and it is desired to kill the larvæ on the leaves, thorough sprayings with Paris green or London purple, would destroy the greater number of them.

But they invariably come down from the trees to pupate—at least the great body of them do—therefore, if the earth around the bases of the trees, was in some manner hardened, approximating to a brick or stone pavement, that great body might all be gathered and destroyed, even on the largest trees. But when the trees are very tall, and the bark is very rough, they don't by any means all reach the ground. I have seen the cavities and the fissures in the bark of such trees, filled with their yellow pupæ, as far up as my vision could detect them. These would therefore require a stiff brush on a long handle, or a powerful spray with a liquid poison. Now, this requires persevering labor; but, unfortunately, nothing but labor will accomplish the desired end.

This insect has been introduced into America from Europe, where it, at one time, was very destructive. More than half a century ago, in this country, it made its first recognized appearance

at Baltimore, Maryland, on which occasion all the beautiful elm trees in a public park had to be cut down, and the branches burned.

The pupa looks as if it might be a desirable "tid-bit" for a small bird, but we have few small birds where elm trees are grown, except the English sparrow, and that bird "lets them severely alone." It is not the English sparrow's nature, being a granivorous bird; it therefore, is not to be held responsible. Two years ago there was a sparrow rookery here not much more than a hundred feet from a badly infested elm tree. There were from fifty to a hundred sparrows hatching and rearing their broods at the time the beetles were pupating, and many of these birds were going in and out all the time. Now, it is well-known that even granivorous birds feed their young on animal food, but these sparrows were not known to appropriate any of these beetles—their pupæ, nor their larvæ. To a small extent they did attack the seventeen-year cicada last summer, as it came out of the ground, and fight about it too; but dogs, cats, pigs, chickens, geese, ducks, skunks, rats and mice did the same. The sparrows fought about them because other animals wanted them.

It is of some importance that people should learn to recognize the elm-leef beetle when they see it, so that when they find it in a state of hibernation, they may at once know what to do with it. Of course most of the damage is done in its larva state, but when the beetle is found in autumn, winter or early spring, and then destroyed, the broods of the following summer will be greatly diminished. In addition to its capture and destruction at the base of the tree, by some suitable device, it has been recommended to jar the trees, spreading sheets on the ground under them, and then gathering the larvæ and destroying them; but this remedy could not well be applied to a very large tree, such as I have heretofore alluded to. It is said that jarring is mainly depended on in Europe, and probably in an ordinary sized tree it may be effectual, but certainly not to very large ones, where the branches overhang the roofs of a house or other building, or extend halfway across a street, or other vegetation.

The applications of liquid poisons, it is recommended, should be made between the middle of May and the first of June, when the larvæ are quite young and tender, if they are hatched at all, but the spraying should be thorough, and the undersides as well as the uppersides of the leaves made wet with it. The Agricultural Department

at Washington city, under the supervision of the entomologist, has demonstrated that London purple is the most efficient poison for the destruction of the foliage-fiend of the elm, mainly because it seems to injure the leaves less than the green.

There are three broods of these insects at least, during the year, but the third one appears to be the worst. It is, however, only a question of numbers, the earlier broods being comparatively the least numerous, which is nearly always the case with double or treble-brooded insects that hibernate in winter.

If the elm-leaf beetle has no parasites infesting it, it is at least preyed upon by carnivorous species of insects, as well as myriapods, spiders, etc. There must, however, be an immense number of them destroyed from meteorological and climatic causes, because those that survive the winter are generally, comparatively few, but those few may become a multitude before the end of the season.

Lancaster, Pa.

NOTES ON AMARYLLIS.

BY W. L. F.

There seems to be some confusion and uncertainty among correspondents of the GARDENERS' MONTHLY in regard to the several species of *Zephyranthes*, or, more properly, *Amaryllis*, as I believe that genus is now made to include species formerly known as *Zephyranthes*.

I have never seen or cultivated *A. Treatæ*, so can say nothing as to its distinctive characters, but have had the *A. Atamasco* growing under cultivation, and have also found it in its native haunts in Florida and Georgia, and have gathered specimens of a decided pink shade, though commonly white, or slightly pink shaded; the pink "*Atamasco*" mentioned by your correspondent, Mrs. Briggs, in the January number, is probably that form, but there is a true species, *A. rosea*, a native of Cuba, much larger and finer than the *Atamasco* lily; it has deep pink flowers 3 or 4 inches across, and more spreading in form than the *A. Atamasco*. It sends up a succession of flowers in early summer.

The true *A. candida* is a very different species from either of the above, with terete fleshy leaves, and smaller clear white flowers, about the size of a crocus and commencing to bloom in August. It sends up through September a succession of its delicate flowers on slender scapes; it is a native of Peru. Both species are easy and desirable bulbs to cultivate, and increase rapidly, especially

A. candida. They are evergreen, but will winter well in a cool dry cellar.

Is not the "yellow *Zephyranthes*" mentioned by "G. R." in the February number, the *Amaryllis*, or, more properly, *Sternbergia lutea*, a bright yellow autumn blooming bulb—mentioned in catalogues as *A. lutea*—and as hardy? But it has not proved so with me, but in this latitude must be taken up and kept over winter.

Hanover, Mass.

GEOGRAPHICAL RANGE OF WILD GRAPES.

BY T. V. MUNSON.

I was pleased to note your request in April number for your readers in Oregon and Washington, and even in British Columbia, to report for your columns any wild grapes found in those regions.

Please allow me to extend the invitation to those living anywhere on the great plateau between the true Rocky Mountains and the Cascade and Sierra Nevada Mountains, north of Arizona. So far, after considerably inquiry and correspondence, I have been unable to learn of native grapes in that vast region, although I have samples from near Salt Lake called "wild grapes," but which seem the offspring of something like the Clinton, and probably introduced by immigrants from the East. Various species of grapes, including some foreign, do finely when planted in protected places near Salt Lake, and I see no cause why native species, such as *V. riparia*, should not exist there in abundance in the valleys and on protected hillsides. There is a long belt of rich cretaceous and tertiary formation good for grapes stretching from south of Salt Lake northward to the Arctic ocean, and which has a less rigorous climate than that of Manitoba anywhere in it from 55° in British Columbia southward. If it proves true that no wild species of grape exist here, then I should conclude that the uplift of the plateau with its mountain barriers on either side took place before the introduction by natural causes of grapes into North America, and that the mountain barriers have prevented their spread to the present time into this great mountain valley. I am anxious to have information concerning and samples of native grapes, if there are any, in this isolated region. I have samples of *Vitis Californica*, from Josephine county, Oregon, on the Illinois River, and doubtless it exists on other tributaries as well as the main Rogue River. I also have specimens from the Upper Sacramento river, in northern California, as well as from San Diego county, in south-

ern California, showing considerable variation from each other. So far, after considerable inquiry, have learned of no wild grapes north of the Rogue river, Oregon, although sufficiently mild as far north as Sitka to grow the Riparia. Have recently received cuttings of *V. riparia* from Mouse river and Turtle Mountains, in the territories of Saskatchewan and Manitoba, which had passed a temperature of between 55° and 60° below zero unscathed.

It is by learning the natural habitats and characteristics of the different species of grapes, or other fruits, that we become enabled, possibly, by hybridizing and selecting to get varieties worthy of cultivation to suit every possible selection.

Denison, Texas.

EDITORIAL NOTES.

HISTORY OF THE POTATO DISEASE.—It would be a valuable fact could we locate the exact spot where the potato disease first appeared. In England it certainly appeared first in its most southern point, the southern shores of the Isle of Wight, in 1845. But the fact that it first appeared here on the edge of its territory gives room for probability that the inducing cause for spore germination came "across the seas" somewhere. But there seems no record anywhere of such experience.

In view, however, of the interest which seems now to attach to this question, it may be well to place on record that another disease was apparent to the writer among potatoes in Alaska in 1883. It was not virulent, but may become so hereafter. The whole plant had a sickly, yellowish hue; but not enough to interfere seriously with its growth. When it existed on one plant, however, it would spread to another, so that in time there would be a circle enclosing perhaps a dozen hills all of the tint. The appearance was such as indicates root fungus to the eye of an experienced nurseryman.

SEA-WEED PAPER.—Paper from sea-weed is a growing industry in France. It is so transparent that it has been used in the place of glass for windows. Making paper from sea-weed is said to be a flourishing art in Japan.

GRAFT-HYBRIDS IN POTATOES.—*Gardening Illustrated* says, that at a recent meeting of the Royal Horticultural Society, Mr. W. G. Smith forwarded specimens of hybrid potatoes obtained by the method of introducing plugs with eyes of one sort into other sorts. Dr. Masters observed that both botanists and gardeners had questioned its

possibility, but that his own experiments, as well as Mr. Smith's, had completely disproved the assertion. Mr. Henslow remarked that a gentleman in Warwickshire twenty-five years ago had tried it by binding together two halves of a red and white potato, and that the resulting produce was intermediate in color. Mr. O'Brien said that the attempts to unite bulbs of lilies had as yet completely failed.

Mr. Darwin seems to credit the statement of some one that bulbs of Hyacinths of different colors, have been divided, grafted, and produced flowers on one stalk of both kinds. We called attention to this last fall and invited experiments. If any made them, let us know with what results.

BLUE GRASS.—Under this head, with the initials "S. D. V.," in *Encyclopædia Americana* it is said: "The most valuable of American grasses is known as the Blue Grass (*Poa compressa*) which springs up spontaneously on limestone soil, and is deemed to be the very best food for every kind of cattle. The vast regions where it remains almost an evergreen, are referred to as the Blue grass regions, a term adopted even in official language."

As this has been so often corrected in our magazine, it is annoying to find the error repeated in a new standard work like this, a work aiming especially to correct the errors of preceding Encyclopædias. *Poa compressa*, is the flat-stemmed Blue grass, of value in agriculture chiefly that it will grow in very dry soil, or partially shaded situations. The species that gave fame to the "Blue grass regions" is *Poa pratensis*.

BLUEBERRY PLANTS.—By an illustration we note that some "Blueberry" plants, extensively advertised in the agricultural magazines, are not of the Vaccinium or Huckleberry family. The plant is the dwarf June-berry of the West, a very good fruit to have, but not the one the buyers expect to get. Botanically it is *Amelanchier alnifolia*.

IMMEDIATE RESULTS IN CROSS-FERTILIZATION.—This subject is still one of interest, judging by our exchanges. In the *Farm and Garden*, Dr. Ayres, of Urbana, Ohio, instances in proof of immediate influence, varieties of apples not usually russeted, producing fruit covered with russet. But this simply proves a "freak of nature," and is well known to have no relation whatever to "cross-fertilization" or to pollen influence in any way.

IS THE SNOWBERRY POISONOUS?—It is now the white Snowberry's turn to get a bad character. *The British Medical Journal* says, four children "suffered considerably" from eating them. We

have known some "suffer considerably" from eating oysters, and all sorts of things kill sheep, cows and every other thing.

CROWS EATING THE FRUIT OF THE POISON VINE.—At a recent meeting of the Academy of Natural Sciences of Philadelphia, the question being on the food of birds during the recent severe snow storm, the chairman, Mr. Thomas Meehan, stated that crows were seen greedily feeding on the seeds or rather fruit of the Poison vine. Numbers of dead crows were found in the vicinity a few days after the storm, but it was probably owing to the severity of that terrible night than to the Poison Rhus, for, though he had known of skin-poisoning by those collecting the seeds, there was abundant reason for the belief that the Rhus was not poisonous when taken internally. Some note of these remarks has appeared in the public prints, and we have the following interesting paragraph from Mr. N. P. Scudder, of the Smithsonian Institution:

"I see by *Science* of March 5, a notice of your communication to the Academy, February 23, relating to the poison ivy, *R. radicans*. I was much astonished to see my horse last fall eat in abundance this plant without injury. At first I endeavored to prevent his eating this plant, but soon gave up the attempt and the horse had his fill, preferring the Rhus to grass."

We may add to this note of Dr. Scudder, that cows eat the poison Ivy or Rhus greedily, and some farmers attribute "ropy" milk to this food. This is however mere guess work, as this trouble with milk often occurs in districts free from the pest. We have known men in a spirit of bravado, and to prove their pretended belief that the plant "would not hurt anybody," chew the leaves without any injury resulting. That the plant will poison people, is all too true, but just how it does so is as yet a mystery.

THE MAIDEN-HAIR TREE.—Of all coniferous trees this (*Salisburia adiantifolia*) is undoubtedly the one which, from its general appearance, has the least resemblance to any other member of the tribe. Yet, although totally devoid of resinous secretions, entirely and regularly deciduous, and although its leaves possess none of the characters peculiar to either Pines or Firs, it certainly is a coniferous plant; an examination of its flowers, and especially of its fruit, and their comparison with the same organs of the common Yew, will show that it belongs to the same tribe. However, so great is its difference from all other coniferous trees, that

its affinity to them would hardly be suspected on superficial inspection, and it is also remarkable on account of the singularity of its foliage, which seems to unite the *Conifere* with the *Corylaceæ*. It is the *Ginkgo biloba* of Linnæus, and also of Kæmpfer, who first discovered it in Japan in 1690. It is also the name under which it was introduced into England about 1754, when Ellis, writing to Linnæus in that year, mentions that Gordon had plants of it.

The name of *Salisburia adiantifolia*, by which it is best known to botanists, was not given to it by Smith until 1796, and is the result of an alteration of the generic name as first given by Kæmpfer and ratified by Linnæus, who, in his "*Metissa*," published in 1771, noticed it for the first time under the name of *Ginkgo biloba*—*Ginkgo* being its aboriginal name in Japan, from which country it is generally given as a native, as well as from China. But M. Siebold, who resided in Japan for a period of seven years, states that the inhabitants of that country do not consider the tree as indigenous there, but as having been brought at a remote period from China. Bunge, who accompanied a Russian mission to Peking, also states that he saw there an immense *Ginkgo* tree of prodigious height and vigour, and whose trunk measured nearly 40 feet in circumference. The popular name in this country of the Maiden-hair Tree is appropriate, inasmuch as its leaves resemble in form the pinnales of the native Maiden-hair Fern (*Adiantum Capillusveneris*); they are of the same yellowish green color and texture on both sides, and through their smoothness and the numerous parallel lines with which they are marked they resemble those of a monocotyledonous plant. They are somewhat triangular or fan-shaped, wedge-shaped at the base, borne on stalks as long as the disc and disposed alternately.

This is a sufficient explanation of the popular name under which it is generally known in this country. An excellent anecdote, in relation to the peculiar name of "*Arbre aux quarante écus*," under which the tree is known in France, and the way in which it was introduced there, is given in Loudon's "*Arboretum*," and runs thus: "In 1780 a Parisian amateur, named Pétigny, made a voyage to London in order to see its principal gardens, and among the number of those which he visited was that of a commercial gardener who possessed five young plants of *Ginkgo biloba*, which was still rare in England, and which the gardener pretended he alone possessed. These five plants were raised from nuts which he had received from

Japan, and he set a high price on them. However, after an abundant déjeuner and plenty of wine, he sold to M. Pétigny these young plants of Ginkgo, all growing in the same pot, for twenty-five guineas, which the Parisian amateur paid immediately, and lost no time in taking away his valuable acquisition. Next morning, the effect of the wine being dissipated, the English gardener sought out his customer and offered him twenty-five guineas for one of the plants which he had sold the day before. This, however, was refused by M. Pétigny, who carried the plants to France, and as each of them had cost him about 120 francs or forty crowns, this was the origin of the name of 'Arbre aux quarante écus,' which to this day has been applied to this tree in France, where almost all the Ginkgo trees have been propagated from the five which were thus imported by M. Pétigny; he gave one to the Jardin des Plantes, where for many years it was kept in a pot and preserved through the winter in the greenhouse until 1792, when it was planted out by M. André Thouin, who gave the above relation in one of his lectures."

From that excellent book, Veitch's "Manual of the Coniferæ," we also gather that "it is one of the most remarkable and distinct deciduous trees that adorns the parks and gardens of Great Britain. Its light and airy aspect, its peculiar foliage, and the imposing dimensions it attains render it also one of the most picturesque of trees." On account of the diœcious character of the Ginkgo its fruits are not at all common in this country. The first which flowered in England was a male plant at Kew, as far back as 1795, and the first tree bearing female flowers was discovered by De Candolle in 1814 at Bourdigny, near Geneva. After that discovery being made by M. De Candolle, cuttings of the female plants were distributed by him from the Botanic Garden of Geneva, to the different botanical gardens of Europe. But in England, where it has been largely distributed, it has been extensively propagated from the stool in the establishment of Messrs. Loddiges, late of Hackney, and which was a male specimen, which accounts for the greater number of large trees growing in this country being stamiferous or male. The male catkins, which appear generally in May with the leaves, are produced on the wood of the preceding year and on old spurs; they are sessile, about $1\frac{1}{2}$ inches long, and of a yellowish color. The female flowers, which are produced in pairs and borne on long foot-stalks, possess this peculiarity, that each of them is in part enclosed

in a sort of cup produced by the dilation of the summit of the peduncle. Both forms require in our climate to attain a considerable age before they produce flowers. In China and Japan this remarkable tree is cultivated for the sake of its fruit, which in Kæmpfer's time formed part of every entertainment and was much esteemed.

The Maiden-hair tree has produced several varieties, all of which appear to have originated on the Continent. Thus, Ginkgo biloba macrophylla, a variety found at Avignon about 1850, has much larger leaves than the species, being nearly semi-circular, and often measuring from 5 inches to 6 inches in diameter. The variety, pendula, has its terminal branchlets pendulous, but this character is no addition to the beauty of the normal form; and in the variety, variegata, the leaves are striped with a pale yellow and indistinct color, which does not render the plant any more valuable than the common form. A deep and naturally moist soil is one in which the Maiden-hair tree thrives most luxuriantly, and where it grows from 70 feet to 100 feet high.—S. in Garden.

PARALLEL HABITS IN DIFFERENT ANIMALS.—It is singular how closely the habits of the reindeer and the buffalo approximate to each other. Each have their treeless prairie, but seek the woods in winter; each have their woodland species; each separate when the time comes to bring forth their young; each mass together in their annual migrations.—Page 167, *Wild North Land*, by W. F. Butler.

MOVEMENT OF STAMENS IN THE FLOWERS OF THE NIGHT-BLOOMING CEREUS.—We did not know that there was any movement in the stamens of the night-blooming cereus, though it has been noticed in the common Opuntia, Portulaca, Purslane, and allied plants. The following note from the *Gardeners' Chronicle*, is in relation to Mr. Castle's recent work on cactaceous plants:

"We should gladly have heard more from the author regarding the movements of the stamens and the process of fertilization, and further proof of his allegation that the pollen and stigmas are mature at the same time, in the majority of the species. If this be really so, and not, as we suspect, merely apparently so, we are at a loss to conceive the use of the glorious colored petals, or the fragrance of the night-flowering cereus. The movements of the stamens in the latter plant are very marked, without any external aid, such as a touch. In olden days it was naturally supposed that this motion of the stamens was a provision to secure the deposit of pollen on the stigma of the same flower, and so possibly it may be, but if so, of what use is the fragrance? So far as we know, no one

has recorded the condition of the stamens and stigma in these plants, since the publications of Darwin have shown the vast importance of cross-fertilization."

Echo only answers the question as to the use of fragrance to a cactus. Suppose we say it is to attract night moths to the honey secreted at the base of the tube. It will take a pretty long-tongued moth to get down the tube of some of our cereuses. In latifrons and phyllanthoides, the tube is often nearly a foot long. And then in those very arid places, where these flowers "waste their fragrance on the desert air," there are scentless kinds, which ought to have as much need of fragrance.

TRAVELS OF THE COFFEE PLANT.—The Rev. Henry Ellacomb furnishes a graphic account of the narrow escapes the coffee plant has had in its travels round the world. We have to premise, for the benefit of the younger portions of the human race, that, before the age of steam, it was not an easy matter to transport plants over months of ocean travel. A case on deck, covered by glass, to preserve from spray, and as much fresh water as could be spared from the scanty drinking supply, were as nothing to the personal care required to guard from numerous accidents. After all the trouble, and after it had been brought safe to port, the plant might be lost by the gardener having to guess at its habits or desires. Thus, the first coffee plant introduced, after much anxiety, into Europe, in 1703, died in the Royal Gardens at Versailles. Subsequently the Burgomaster of Amsterdam gave another to the gardens, and from this plant numerous young ones were raised by cuttings, one of which was placed by Antoine de Jussieu, in charge of Declieux, a French naval officer, to take to Martinique. He got the plant safely to its destination, but only at a great sacrifice to himself. The ship's supply of water ran short, and only a small glassful daily, was the allowance to all on board. Declieux shared his with the plant in his charge, though suffering severely by the want of it for himself. From this plant, so successfully, yet, in some sense, so painfully introduced to the Western Hemisphere, all the original plants, and perhaps, indeed, all the plants of the New World, sprung. A new species has been discovered in Africa, during the few past years, and called, from the American Colony, Liberian coffee. But in these days of rapid traveling the seed can be carried in good condition for hundreds of miles, and through E. S. Morris, who has done so much to develop the material interests

of the colony, the plant has been introduced into the New World, without a tinge of the anxiety that marked the introduction of its famous ancestor.—*Independent.*

FLOWERING OF AMENTACEOUS PLANTS.—Near Philadelphia, and other parts of the Union, hazel nuts, walnuts, hickories and similar plants have the male catkins brought forth early by a few warm winter days. There is no pollen later when the female flowers open. This season both are simultaneous. A large crop of nuts is expected.

SCRAPS AND QUERIES.

UNSEASONABLE TEXAN WEATHER.—A correspondent from Denison, under date of April 3d, says: "A recent severe freeze here has greatly damaged the prospects for a crop of peaches, plums, apricots, pears and grapes, though all are not killed, as I thought at first, after a partial examination. Apples, blackberries, and late leafing-out kinds of grapes are all right. Strawberry blooms partly opened and killed. This is the severest freeze of the kind noted here for fifteen or twenty years."

COMMON NAMES OF PLANTS.—A correspondent sends us the following extract from the letter of an English gentleman—indeed we have the whole letter before us,—asking if we can identify the plants named. We regret our inability, and can only hope that some of our friends who decry botanical names, and think common names so preferable, will help us and our correspondent out in the matter: "In your letter you say you are not the largest nurseryman in the United States, but that you have a good collection of rare things; the following plants I have had offered me from America, but I would rather get them from one known as you are. I only want American plants, I can get European here.

Queen of Heaven,
Bush on Fire,
Devil in a Bush,
Hell in a Blaze—

these are all California plants as I understand. I want also a good collection of Bible plants; what can you supply? You will understand what I require, and you may make up a bill to the amount of \$25. I do not expect old forgotten plants; but such as are wholly unknown. Queen of Heaven I am told is a very fine tree, also Hell in a Blaze."

LITERATURE, TRAVELS AND PERSONAL NOTES.

EDITORIAL NOTES.

POMICULTURE AND OLERICULTURE.—Dr. E. Lewis Sturtevant, of Geneva, proposes that we drop the words fruit culture and vegetable culture, and adopt in their stead pomiculture and olericulture. Following the manufacture of agriculture for farming, horticulture for gardening, silviculture for forestry, and floriculture for the culture of flowers, Dr. S.'s suggestion may be pardonable. But for our part, we are not ashamed of the good old Saxon. When the GARDENERS' MONTHLY was projected, there was no end of propositions from friends as to what its name should be. But they were all "Horticultural this," or "Horticultural that." "The adjective 'monthly' had recently been popularized as a noun by the *Atlantic Monthly*, and it seemed to the writer of this, that 'gardener's' added to this, would be just as well as the Latinized "Horticultural" term. We have never had cause to be ashamed of our old Saxon name, and hence take unkindly to Dr. Sturtevant's suggestions.

THE NARCISSUS FLY.—In the old world this insect is a great pest to the growers of this beautiful tribe of plants. This insect is known to entomologists as *Merodon equestris*. Dr. J. Ritzema Bos has written a complete account, which, with colored drawings, has been issued in pamphlet form by the Teylerian Institute of Haarlem. We are indebted to M. Krelage, the President of this institution, for a copy of this profound work.

LIABILITY OF TRANSPORTATION COMPANIES.—Judge Rumsey, of the New York State courts, has decided in favor of Messrs. Spaulding for \$993.25 and W. S. Little for \$942.45, with near two years' interest since the suits were begun, against the Merchant's Dispatch Company. Spaulding's trees were three weeks from Rochester to Vinton, Iowa.

These decisions seem like being advantageous to nurserymen, and yet they lead to harassing regulations on the part of companies that often make it almost impossible to do business at all. It is best for all parties, that mutual understandings and preliminary contracts and engagements should supersede law. These suggestions are made without a knowledge of the exact facts in these

cases, which no doubt made legal proceedings a necessity.

HORTICULTURE AND AGRICULTURE.—Professor Reagan, of Depauw University at Greencastle, Indiana, recently gave a pleasant paper before the Illinois Horticultural Society, on the methods pursued by him in teaching, as Professor of Horticulture. We do not desire to be over-critical in remarks on this excellent paper; but it seems important to note that just what is and is not horticulture, has never been well distinguished in many quarters, and Prof. Reagan's paper is an illustration of this. And yet it is very well to get an exact definition of each. Prof. R. says:

"Horticulture is an art, not a science. It is a branch of agriculture and includes pomology, vegetable gardening, landscape gardening, floriculture, the propagation of trees and plants, or the nursery, forestry, etc.

"In æsthetic horticulture, the reward of our labors is in the pleasurable enjoyment we feel in its results. Our pleasure is proportioned to the degree of culture we enjoy. We designate those who follow horticultural pursuits from this standpoint as amateurs.

"Economic horticulture offers a more substantial reward in her golden fruits. While those who have a natural adaptability to the calling will usually succeed best, there are many who follow horticulture for the living they find therein."

We see from this the correctness of the position we have often assumed, that the Western idea of "horticulture"—horticulture as it is taught in agricultural colleges—is simply agriculture; or, as Prof. R. puts it, "a branch of agriculture." We have no objection to pomology, as it is generally understood, or market gardening, being classed with agriculture; but when it comes to landscape gardening, flower culture, or the general work of the florist or nurseryman, we should object to agriculture's claim to its possession, even as a "branch."

Nor do we think there is any necessity for getting over the difficulty Prof. R. evidently feels, when he incites agriculture to seize horticulture in this unceremonious way, by the division into "æsthetic horticulture" and "economic horticulture." There is no more reason for calling one who loves a garden, an æsthetic horticulturist,

than to call one who gets up a good fat hog regardless of cost, an æsthetic agriculturist.

The simple fact is, that agriculture is that art by which man seeks to get his living from the fields. There is little "amateur" business about it, as an amateur is here defined.

Horticulture is that art which seeks to beautify the land, and especially the land which surrounds our homes; to beautify it by plants, trees or flowers, or by so modifying the earth and commanding the water and the sky, that we may aid plants and flowers in their work. Indeed, as the very names imply, horticulture deals with the garden, and agriculture with the fields, and their work is wholly separate; of course there are times when the work of each encroaches on the other. There is water and there is dry land. But there are also swamps where it would be difficult to tell whether we should call the spot a lake or an island. We do not on this account permit the sea to call the land a branch of itself, nor the land to claim the sea as a part of itself. Neither can we allow the claim that horticulture is a branch of agriculture.

JOHN GERARD.—Our readers may know that the most ancient English work on gardening that has come down to our day is Gerard's Herbal. The copy on the Editor's table is a large octavo of 1630 pages, printed in 1636, which is the third edition, it having reached this in thirty-nine years from the date of the first issue. Pulteny, in his sketches, tells us that the work gained great repute, and the third edition, for some reason or other, is scarcely ever seen; hence the Editor's copy holds a choice place in his library. It is bound in solid leather, as if it might last for a thousand years yet. Thomas Johnson was the Editor of this edition, Gerard having died in 1607. Johnson was regarded as the best botanist of his day. He was killed in the Cromwellian wars, or rather died from a wound in the shoulder in 1644, while attempting with others the relief of Baring House. Mark Catesby, of South Carolina, named the *Callicarpa* in his honor, *Johnsonia Americana*, in 1739, as Plumier had named the *Gerardia* for the author of the work, but for some reason Linæus dropped the generic name and made it *Callicarpa Americana* instead. It is to be regretted that no plant now commemorates the name of this very able man.

We have been led to these recollections by a notice of Gerard in the London *Spectator*. He was a Cheshire physician, but for twenty years

superintendent of the gardens of Sir Wm. Cecil, the Lord High Treasurer, at what is now known as The Strand, having his own garden in Holborn. Lord Cecil probably bore part of the great expense that must have been involved by the publication of the ponderous work. Of his history the *Spectator* notes:

"We now come to the second point, the notices of flowers introduced into English gardens in Gerard's time, and as we read those words which so continually conclude the paragraph headed 'The Place,' 'this plant grows also in my garden,' we wonder what must the dimensions of his herbarium have been! Here is the history of our queenly White Lily. It is 'called *Lilium album* Bizantinum, in English the White Lillie of Constantinople; of the Turkes themselves, Sultan Zambach, with this addition, that it might be the better known which kinde of Lillie they ment, when they sent rootes of them vnto these countries.' The variety of lilies then known surprises us; many came to Gerard through his 'louing friend, master James Garret, apothecarie in London.' To the Turkes, also, we owe the Crown Imperial, and that gorgeous denizen of our gardens, the Red Lily. 'This plant groweth wilde in the feldeles and mountaines many daies iournies beyonde Constantinople. From thence it was sent, among many other bulbs of rare and daintie flowers, by Master Habran, ambassador there, vnto my honorable good lord and master, the Lord Treasurer of England, who bestowed it vpon me for my garden.' The Day Lily, the Red Gladiolus, or Corn-flag, the Fritillary (called also by Gerard 'The Ginnie-hen flower') were all known to him, while the varieties of daffodils, squills, hyacinths, and anemones are wonderful to read of. 'The double white daffodill' was sent to Lord Burghley from Constantinople; other bulbous plants came from the 'lowe Countries, as also from France.' The 'rush-daffodill' (rush-leaved jonquil?) grew 'wilde in the waterie places of Spaine.' From three kinds of tulips we learn that 'all other kinds do proceed,' tulips being then the peculiar study of Master James Garret, who had, by careful sowing of seed, procured an infinite variety.

"Nor had the tables of our Elizabethan ancestors any lack of fruits and vegetables. Several kinds of peaches are enumerated in the 'Historie of Plants,' as well as apricots, green figs, mulberries, quinces, many varieties of apples (amongst them the 'Pearemaine'), cherries, pears, medlars, &c. Among vegetables we naturally search eagerly for the mention of the potato. Gerard describes two species. The first, he says, grows in India, Barbary, and Spain, of which 'I planted diuers roots (that I bought at the exchange in London) in my garden, where they flourished vntill winter, at which time they perished and rotted.' 'The nutriment,' he tells us, 'is, as it were, a meane betweene flesh and fruit.' The other kind (*Batata Virginiana*) has a still greater interest for us, though we look in vain for its association with Sir Walter Raleigh. Gerard received his roots from

'Virginia, otherwise called Norembega,' and they grew and prospered in his garden. Both kinds of potato are either 'rosted in the embers, or boiled and eaten with oile, vineger, and pepper,' and they 'may serue as a ground or foundation, whereon the cunning confectioner or sugar-baker may work and frame many comfortable delicate conserues!' Though ignoring the connection between the great colonist and the potato, Gerard does not fail to give him due honour. Witness this quaint and suggestive passage in another place in which he describes the Indian Swallow-wort: 'It groweth, as before rehearsed, in the countries of Norembega, and now called Virginia by the H. Sir Walter Raleigh, who hath bestowed great summes of monie in the discourie thereof, where are dwelling at this present Englishmen, if neither vntimely death by murdering, or pestilence, corrupt aire, or some other mortall sicknes hath not destroyed them.'"

In regard to the potato, it may be noted that though it is not unusual to find writers stating that the first mention of the potato occurs in Gerard's Herbal, Gerard himself, or at least this third edition, quotes Bauhin, another old writer as saying, it was "first introduced from the Island of Virginia, thence to France, from whence it spread to adjacent regions." Bauhin further says the roots are called Openanck in Virginia, Papas in the vicinity of Quito, and by Joseph Acosta in his history of India, Benzoni and Pape. In Germany they were called at that time he says, Grublingbaum. He speaks of a colored plate having been issued by D. Scholtzius in 1590, under the name of Pappas Hispanorum. There is also a figure quoted from Mathioli's work, from a sketch sent by Clusius. It is described by Mathioli as *Solanum tuberosum esculentum*, the two first names being adopted by Linnæus on the establishment of the binomial system. Mathioli's work was issued in 1598.

MODERN PALESTINE.—One of the finest tracts of land in western Palestine is to be found in the northwestern slopes of the range commonly known as the hills of Samaria. The more I travel over this country and examine its agricultural resources the more convinced do I feel that it only needs the introduction of capital and enterprise to make it again, as it was of old, as productive, in proportion to its area, as any of the most favored regions of the earth's surface. It so happens that the roads which lead the tourist to the spots which specially attract him pass through its least fertile and most forbidding districts, but even these could be made to blossom as the rose with an ordinary expenditure of labor and capital, while the greater part of the country, especially of Galilee,

which lies out of the beaten track, astonishes you with its capabilities in respect of soil and other natural advantages. Here, for instance, at this wealthy village of Nusser El Fahn, we find ourselves in the centre of a rich but sparsely settled district only waiting to be settled up. With an elevation of one thousand five hundred feet above the sea, from which it is distant about sixteen miles, and of which it commands a full view, it enjoys a cool and salubrious climate all the year round. The romantic valleys by which the village is surrounded are thickly planted with olive groves, which contain over a hundred thousand trees and are a great source of revenue. While too far from the village for the protection of any crop, the hillsides and summits are clothed with a dense undergrowth of scrub oak, terebinth and other shrubs, which are only prevented from becoming forest trees by the charcoal burners, but their quick growth testifies to the richness of the soil. To the north the range extends for fifteen miles to the base of Carmel. The woodland disappears, and is succeeded by rolling chalk downs, affording magnificent pasturage and good arable land, for it is well watered, and from its temperate and healthy climate is called the "breezy land."

The villages here are small, few and far between, and there is room for a large population, but the most tempting land of all is the tract between Nusser El Fahn and the sea, where the oak trees which are scattered over the pastures and corn fields attain a large growth and the country presents the appearance of an immense park. From an artistic point of view, the woods and the farm lands are so combined as to form the most perfectly diversified scenery, just where the rolling hills slope gently down into the plain of Sharon. It was across this country that our road lay to Cæsarea, which was our objective point, first through the thick copse of the upper valleys, and so out upon the park-like uplands, where the whole population was out in the fields gathering the crops, which strings of camels were conveying to the village threshing floors. Here and there was a money-lender from Acre or Beyrout squatting under an umbrella to see that the peasantry did not rob him of his share. This is a busy time with these gentry, who are the bloodsuckers of the Fellahin, to whom they advance money at exorbitant rates of interest, while the latter, in revenge, resort to every conceivable device to conceal from them the real extent of the crop and to make the proportion coming to them as small as possible,—
A correspondent of Salt Lake Contributor.

ANDROMEDA.—Most of our readers versed in horticultural botany, know that Linneus gave the name, Andromeda, to a plant he saw in his northern tour, because some circumstances connected with the situation in which he saw the plant, reminded him of the ancient story of Andromeda. As these plants are well-known in America, which is their chief home, we give a modern version of the ancient tale, as we find it in a floating "exchange:"

"When Cepheus was King in Ethiopia, his wife Cassiopeia, who was herself a famous belle, boasted that her daughter Andromeda was more beautiful than the Nereids. The gods of those days had precious little patience with human vanity, and the goddesses, particularly, were very jealous of the charms of their mortal sisters. Accordingly, when the fifty submarine beauties who answered to the name of Nereids heard of Cassiopeia's impious boast, they were indignant, and acting, it may be, upon the maxim, 'the greater the truth the greater the libel,' they besought Neptune, the ruler of the sea, to wreak vengeance upon Cassiopeia and her fair daughter. Neptune, who was always ready for a shindy, promptly proceeded to drown out the whole of Ethiopia. The despairing inhabitants, driven from one refuge to another by the advancing waters, went, after the fashion of the time, to the oracle of Jupiter Ammon, and the ungallant god told them the only hope they had was in chaining Andromeda to a rock, and leaving her there to be devoured by a sea monster. The fact that the unhappy girl was a princess did not avail to save her, and she was dragged to the edge of the sea, chains were riveted upon her wrists and ankles, and, fastened to a rock, she was left to her awful fate.

"Presently the monster appeared advancing to enjoy his feast. Sparks of fire flew from his distended nostrils as he eagerly snuffed the air, and his eyes gleamed with ferocious delight when he beheld his fair victim afar off, straining at her cruel chains in an agony of terror. The monster swiftly clove the waves, leaving a track of boiling foam in his wake. Rigid with fear, and unable to withdraw her eyes from the frightful creature, the beautiful Andromeda stood, her arms extended by the chains, and her feet immersed in the waves that his approach had raised, while he paused a moment to contemplate his entrancing prey.

"But there were other eyes fixed upon Andromeda, and her charms had gone straight to the heart of a champion of whose very existence she was unaware. The high-born and valorous Perseus was just then returning through the air from his famous expedition against the Gorgons. In his hand he held the head of Medusa, the mere sight of which was capable of turning the beholder into stone, and which he had severed with a single stroke of the diamond dagger, lent to him by one of the gods. Perseus took in the situation at a glance, and he was not the sort of person to be intimidated by any kind of monster, especially when a captivating princess was to be rescued. According to one account, Perseus protected by

Pluto's helmet, which rendered him invisible, and balancing himself for an instant like a hawk upon the wings he had borrowed from Mercury, swooped down upon the monster, and thrusting the dreadful Gorgon's head in front of its eyes, froze it into stone before it could close its jaws upon its shrieking victim.

"But the story we prefer to believe is, that Perseus met the enemy openly, in the sight of the princess, and attacked him with the dagger only. Then the sea was lashed into foam, and the noise of the conflict echoed along the coast. Poor Andromeda was almost drowned in the surges rolled up by the monster in his struggles. Finally Perseus got in a fatal thrust with his diamond blade and the battle was over.

"Perseus then broke Andromeda's shackles and bore her in triumph to her father's court. With the death of the sea monster the floods retired, and the Ethiopians prepared to celebrate the nuptials of their princess and the hero who had rescued her. But there was trouble at the wedding. Andromeda had been promised in marriage to her uncle Phineas, but she preferred the heroic Perseus to the man who had proved too cowardly a lover to try to rescue her when she was exposed to the jaws of the monster. Phineas went to the wedding with a gang of ruffianly followers bent on having a row. He got more than he bargained for. Perseus was a hero of the first magnitude in every respect, and with the aid of the Gorgon's head he overcame all his enemies. The gods were so well pleased with Perseus that they placed him and his bride, upon their death, among the stars, and gave them Andromeda's father and mother, and even the sea monster, to keep them company. And so they can all be seen shining there to this day, as they were in the time of Aratus.

"For there a woeful statue form is seen,
Andromeda parted from her mother's side. Long I trow.
Thou wilt not seek her in the nightly sky,
So bright her head, so bright
Her shoulders, feet, and girdle
Yet even there she has her arms extended
And shackled even in heaven; uplifted,
Outspread eternally are those fair hands.

"It gives one a clear conception of the antiquity of these constellations when we know that they must have been familiar to St. Paul, for he quoted one of the opening lines of Aratus' great poem on the skies in his speech to the Athenians on Mars Hill. And they were as ancient as the hills in his day. This story of Andromeda, framed in the stars, is older than the history of Europe."

BOTANICAL NAMES.—Lady Ruthven, a well-known English lady, protested that she had learnt but two botanical names, *Aurora borealis*, and *Delirium tremens*, and these she said, she could not point out in her whole collection. But the Sweet Williams and Primroses she knew every time.

EARLY NURSERY IN MAINE.—Ephraim Goodale had a nursery near where the town of Orrington now stands. Efforts to fix the exact date of its commencement have not succeeded, but it was

certainly between 1804 and 1812. Pear and apple trees were the chief articles dealt in. In an advertisement without date, Mr. Goodale assures his customers that his "Pear trees are not subject to lice." The varieties he offered were all foreign.

ALGIRETA.—Under this Mexican name, "G. W. H.," sends us from Albany, Texas, a specimen which he says, "bears a red berry, tart and very nice eating—like a currant,—and with a lovely wreath of golden flowers." It is *Berberis trifoliolata*.

PRICES PAID FOR NEW FRUITS.—Mr. Jacob Moore received \$500 for his Brighton grape, and Mr. Rogers \$1500 for Salem. Few others who have been fortunate enough to stumble on a new variety, or persevering enough to raise seedlings, ever made much.

FLORISTS AND AMATEURS.—A correspondent of the *Florist* makes the good point, that while florists who raise flowers are taxed for their business, amateurs who sell flowers ought not to go scot free. It regards this sort of competition as unjust and unfair.

KILLING SEEDS.—The *Florist* notes that in order to "sell cheap," some conscienceless seedsmen will mix an old and common kind with a few of the new or rare ones, but roast them first to prevent detection. The customer thinks he has a "nice lot" of the rare thing, but wonders why only a dozen or so come up.

THE DEVIL'S WALKING STICK.—This is the popular name of the *Aralia* or *Fatzia horrida*, in Washington Territory. In the east its stronger growing neighbor *Aralia spinosa* is known as Devil's Club, Club of Hercules, and Angelica tree; the leaves somewhat resembling the herb Angelica.

DR. ENGELMANN.—Dr. Gray, assisted by Prof. Trelease, is collecting the works of this eminent botanist—and these will be published, we believe, under the auspices of his life-long friend, Mr. Henry Shaw, of St. Louis. No better tribute could be offered to the memory of this excellent man than by a collection of this character, who lived only that he might be of use to others.

PHILIP R. FREAS, EDITOR "GERMANTOWN TELEGRAPH."—Few men have made themselves better known in connection with agriculture and horticulture in America than Philip R. Freas, until the past two or three years Proprietor and Editor of the *Germantown Telegraph*, who has recently passed away in his seventy-eighth year. He was a brilliant example of successful triumph over adverse circumstances, and affords a striking il-

lustration of what may be accomplished by those who dare to defy what seems to be an adverse fate.

A difficulty in hearing well deprived him in early life of the full enjoyment of those social pleasures so dear to the young—a deprivation the full appreciation of which can only be fully measured by those who have similarly suffered. But it led to those self-dependent habits which really proved the foundation of his success.

At about the period of his entry into manhood, he started his printing establishment, and his *Telegraph*, which, without a single week of intermission, he edited for over half a century. Yet, through a large part of this time, he met with domestic afflictions, and physical sufferings, enough to weaken the bravery of the stoutest heart. He had his bed-room attached to his editorial room, and from his bed of suffering overlooked and directed everything that was to appear in the columns of his paper. Few of his readers knew, while going over the genial good-tempered discussions directed by his editorial pen, how full of fortitude was the brave heart that never faltered in the struggle against the shadows; but insisted on sunshine and light for everybody else, though the dark pall was ever threatening to shut out the cheerfulness from his own career. The thousands whose lives his pen has brightened can never know of the sacrifices made in their behalf by this courageous and good man.

Outside of this personal obligation, agriculture and horticulture are deeply indebted to him. When he began the *Telegraph* with its admirable agricultural department, agricultural literature was in a very different state from now, when even city papers believe they can be scarcely successful without a "farmer's column" among the rest. He was admirably fitted for the editorship of such a department. Born and brought up on a farm at Barren Hill in Montgomery county, not a half dozen miles from where he lived and died, he knew just what the progressive farming needed, and he was just the man to lead in that line. He was very fond of calling his beautiful garden in Germantown, his *Telegraph* farm, and the little experiments which he conducted there—the more valuable for their limited extent, which induced thoroughness—than they really appeared to be.

He had many honors offered him, which his love for his editorial position led him to decline. The writer of this happened to be with him when a message from the President was received, tendering him the position of United States Commissioner of Agriculture.

The career of Mr. Freas illustrates another point not often as highly appreciated as it might be; namely, the advantage to a community of a live newspaper. Germantown has had a name and fame that it will never lose, because the *Germantown Telegraph* was successfully established there. For a quarter of a century there has been no legal Germantown. It is simply the Twenty-second Ward of the city of Philadelphia. But it is practically a city of itself yet—a city of 50,000 inhabitants—with four weekly newspapers, and an active, thriving business community; and all in the main made such through the energy and ability of the *Germantown Telegraph*.

SAMUEL W. NOBLE.—The Pennsylvania Horticultural Association has met with a double loss in the death of this gentleman on the 22d of March, the day before that of his co-laborer, Thos. M. Harvey. He had been for many years Vice President of the body. He was regarded as an authority on the nomenclature of fruits, especially on apples. His orchard at Jenkintown in Montgomery County, near Philadelphia, at one time had representatives of most of the leading kinds; his plan being, in order to test them, to graft wherever a branch would prove a success. In past times, when Pennsylvania nurseries were scarce, he had a small fruit-tree nursery in connection with his orchard and farm, which did good service in spreading good fruits among his neighbors and friends. Like his colleague in the association, Thos. M. Harvey, he was a modest member of the Society of Friends, and only those who knew him well had any idea of the great breadth of his intelligence, or the immense amount of good which in a quiet way he accomplished.

MR. HARRY INGERSOLL.—Readers of Downing's charming works, and other treatises on landscape gardening, will be familiar with the name of "Medary," the country-seat of Mr. and Mrs. Harry Ingersoll, near Green Lane Station, of the North Pennsylvania railroad, Philadelphia, and will be sorry to learn of the death of Mr. Ingersoll, which occurred on the 9th of April, he being in his 77th year. Mr. Ingersoll was a member of the old Philadelphia family of that name, but entered the Navy in youth, and as a midshipman took part in the Mexican war, for meritorious services in which he was promoted to a lieutenant. Many years ago his only son was killed by a railroad accident at Burlington, N. J. Since when, with ample means they have devoted themselves to their beautiful grounds, and the super-

vision of his farm. In his successful agricultural operations he felt a just pride, while, as already noted, the beautiful home grounds are justly regarded as one of the best specimens of tasteful landscape gardening in America.

THOMAS M. HARVEY.—Intelligent horticulture has suffered a severe loss in this gentleman, whose death occurred on the 23d of March, suddenly, at his residence at West Grove. He was well versed in those sciences that had relation to agriculture and horticulture, and his whole life was devoted to the endeavor to make this knowledge of practical value to the arts he loved. He was a leading officer of the Pennsylvania Fruit Grower's Society—later the Pennsylvania Horticultural Association, and indeed one of its founders. He was one of those rare men, who was "never too old to learn"—indeed, if he had any weakness, it was too strong a feeling that what he had yet to learn was far in excess of what he had achieved, and this modesty prevented him from being as useful as one of his eminent acquirements might have been.

HON. JOHN WELSH.—As President of the Board of Commissioners of Fairmount Park, the decease of this estimable gentleman demands a note in our columns. This event occurred on the 10th of April, he being in his eighty-first year. He was emphatically Philadelphia's favorite son. An eminently successful merchant, he yet found time to devote to public affairs. He served in its City Councils, and there is scarcely an association for educational, scientific or charitable purposes in the city, but has had his gratuitous and successful services. "It was always enough that anything was under the patronage of John Welsh, in order to be pushed with enthusiasm by the whole city. When the Sanitary commission was organized, with another successfully practical man of New York as its President, Rev. Dr. Bellows, it was determined to get up a fair in Philadelphia, for the benefit of the army in the field. It was to be on a grander scale than anything of the kind in history. A delegation went to New York to consult with him on the details. "I know," said one delegate, "an excellent gentleman, with plenty of time on his hands, who would act as President." "A gentleman of leisure!" exclaimed Dr. Bellows. "Avoid them as you would avoid the pestilence! Gentlemen, you want no details from me. Go back to your city. Hunt up your most successful business man, who has not another moment possible to spare. Insist on his presiding in this emergency, and your success will be grand." John Welsh

was selected. It was the grandest affair that history has recorded.

And there is the great American Centennial. John Welsh, as its financial President, ensured its great success. Though in his eightieth year, he was again called on by his fellow citizens to lead off on the local committee to receive the combined British and American associations. The American Association for the Advancement of Science has always been a pet with the people. Cities try to outvie each other in making the meetings in their cities successes; but no such success as that which followed the Philadelphia meeting, was ever known. His city has always delighted to honor him; so has the nation. As United States Minister to England, there was never a more faithful or respected representative of the American nation.

As President of the Fairmount Park Commission he served his city in a double capacity. There had grown up in certain quarters a feeling that the people could not be trusted—that in some sense universal suffrage was a failure. Hence, in order to keep certain departments "out of politics," Commissions were established, where the members are appointed by the Judges, or in some other way, except by popular election. The result has been that the most offensively ruled political departments in the city are those which are governed by these separate Commissions. When Mr. Welsh was chosen Minister to England he wanted to resign his position as President of the Park Commission, but so great was the fear that a mere politician might succeed him, that a powerful pressure induced him to retain it during his absence, thus serving his city in the double sense we have intimated.

His home grounds at Germantown were very beautiful, and gave to its owner a great charm to his life. Not ten days before his death the writer of this had a letter from him in relation to his work on his estate, which could not have exhibited greater enthusiasm, though from one in the youthful vigor of life with threescore years before him.

Such lives are rare and seldom appreciated to the full extent, till the light ceases to burn; but the following darkness serves the purpose of making the loss the more vivid, and leads to a fresh crop of useful lives, born of the great example that so lustrously shone before.

TRANSACTIONS OF THE WORCESTER CO. MASS. HORTICULTURAL SOCIETY.—The love of horticulture and the "money in the garden," are two very distinct ideas, each of great value in their way,

but which should never be confounded. Yet there is often danger from such confusion. The Pennsylvania Horticultural Association often has cause to complain that at the winter meetings, the citizens at some of the places of meeting often look on them with suspicion instead of welcoming them with smiles, believing that it is a body whose sole object is in getting the last dollar from them out of a bushel of peaches, or the last penny on a pot of plums. The secretary of this society in his report has an eloquent plea for pure horticulture, which it would profit the earnest members of all horticultural societies to read.

PROCEEDINGS OF NEW JERSEY HORTICULTURAL SOCIETY, 1885.—Besides many essays of unusual interest, we have here a full exposition by Prof. Arthur of his investigations in fire blight in the pear. The observations confirm Prof. Beal's views of the bacterial origin of the disease.

CONNECTICUT STATE BOARD OF AGRICULTURE.—Annual report for 1885. From T. S. Gold, Secretary, West Cornwall, Connecticut. Mr. Augur has a paper on saving fruit, that will interest orchardists; the other excellent articles and discussions relate chiefly to agriculture.

AMERICAN GRAPES.—Mr. T. V. Munson's address before the American Pomological Society, at Grand Rapids, has been published in pamphlet form. It is a valuable contribution to botany as well as horticulture. Mr. M. has made a special study of the grape family, and his opinions and conclusions receive respect from his colleagues.

HOW TO GROW STRAWBERRIES.—By George Knapp. Published by H. D. Watson & Co. Greenfield, Mass.

Books on strawberries and other small fruits, are common in every library, but they are usually half filled with description of varieties; and, as these praised by one grower to-day, are condemned by the same pen to-morrow, render the books of but little value a year or two after. Hence, there is plenty of room for cheap books on strawberry culture, though issued every year. This view is forcibly impressed on us by this little quarter-dollar, paper-covered book of 54 pages, which not only gives a full description of all the varieties talked about at the present time, with critical notes of their comparative merits, but also full details of the newer modes of culture, not known to the authors of the standard works.

It is, for instance, only in recent years, since the GARDENERS' MONTHLY pointed out the great value of potting strawberries for transplanting,

over the old-fashioned plan of digging up the runners straight from the plant, that the idea has reached a point of general practical importance, and we find no mention of it in the usual standards.

This little book is fully up with the times, and contains all that the modern strawberry grower will want to know. We heartily commend it to all who love to grow this delightful fruit.

As a sample of the book, we extract the following about potted runners:

"Though of comparatively recent introduction, so great has been the demand for pot-grown strawberry plants, that of itself it has grown to be a most important feature of the nursery business; being grown and set at a time when other plants cannot be properly or successfully handled, it becomes a doubly profitable industry. The value of potted plants is two-fold; by setting them the grower is enabled to secure a fair crop the first season after planting, and should circumstances prevent him from obtaining his plants at the proper season in the spring for planting layer plants, he may set potted plants during the hottest days of July and August with perfect safety. When one is obliged to buy, it will not pay him to set pot-grown plants only in small quantities, when fruit is desired as quickly as possible, or for home consumption only. Another advantage of potted plants is for experiment; if the planter wishes to test a new variety, by setting a few potted plants he may obtain sufficient fruit, the following season, to enable him to judge with some degree of accuracy, whether it will prove worthy of extended cultivation with him.

"The price of pot-grown plants is about double that of ordinary layers at the nursery; to which cost must be added that of transportation which, in long distances, is quite an item. Those who already have a bed of plants, may grow potted plants from it after a little practice, at a small expense, by observing the following directions:

"After the parent plant has thrown out runners, prepare a number of two-inch pots, filled with fine, light earth; with a hand trowel make a hole directly beneath the newly-formed plant, sink the pot in the hole to a level with the earth, force the plant into the pot, being careful not to break it at the crown, nor to cover too deeply. In from ten days to two weeks the pot is completely filled with well-grown and healthy roots; the runner is then separated from the parent plant, the pot taken up, and the plant removed from it, together

with the ball of earth adhering to the roots, and planted. Figure 1 represents a potted plant



Fig. 1.

turned out of pot. When prepared for shipment, the plants are wrapped singly in paper and carefully packed."

FERTILIZERS.—By J. J. H. Gregory. Mr. Gregory is one of those members of the seed trade of whom the profession may be proud. He is not only a gentleman who has been eminently successful as a business man, but is well known in the walks of science, and to those who take a pleasure in general intelligence in its broadest sense. This combination of science and practice is by no means common, especially among book-makers; and this fact renders this treatise on fertilizers the more valuable. It is a paper-covered, small octavo pamphlet, of 116 pages—paper-covered, we presume, in order that it might be sold cheap and widely circulated, and thus do the more good. Yet one cannot but regret that a book so intrinsically valuable should not have been thought worthy of binding and putting in regular library shape. Paper-covered—pamphlet-like—books are rarely preserved for any length of time. In this Mr. Gregory tells how to compound formulas for artificial manures—where the materials come from, and where to get them in the cheapest form.

DIRECTORIES.—The various sections of the garden have developed into so many distinct interests that special directories for each seems a necessity. Mr. Tillinghast, of La Plume, Pa., proposes to meet this by issuing separate lists of seedsmen, nurserymen, florists and vegetable plant growers. It is a good idea.

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

SECRETARY HARRISON OF THE PENNSYLVANIA HORTICULTURAL SOCIETY. — The Twenty-fifth

Anniversary of the election of Mr. Apollus Walcott Harrison, to the position of Secretary of the Pennsylvania Horticultural Society, was made memorable by a pleasant little gathering at the close of

the spring exhibition, in the course of which Mr. Robert Craig with a neat speech presented him, on behalf of the Society of Florists, with a gold-headed cane. It was also the Nineteenth Anniversary of his service as Treasurer. Mr. Harrison by his urbanity and devotion to his duties has many friends everywhere.

THE HOLLAND PREMIUM HYACINTHS.—The following were the chief varieties in the fifty of D. Fergusson Sons, which obtained the Gold Medal at the March meeting of the Pennsylvania Horticultural Society :

S. White...Grandier Merville	S. Rosy...Lady Grey
"Red...Pehsier	"Red...Queen Victoria
"Blue...Princess Wilhelmina	"White...La Neige
"White...La Plucelle d' Orleans	"Rosy...Tubeflora
"Blue...William I	D. Red...Diebels Sabolas-kanser
D. Red...Koh-inoor	S. " ...La Prophete
S. White...Voltaire	"White...Baronness Von
"Blue...Lord Derby	" " ...Montefiore
"White...Elfriedea	"Violet...L'Unique
"Blue...Lord Melville	D. Blue...Charles Dickens
" " ...Blondea	S. Red...Josephine
D. Red...Prince of Orange	"White...J. Innocence
S. Blue...Panemman	"Yellow...Duke de Malakoff
"Yellow...Ida	"White...Alb. Superbum
"Blue...King of the Blues	D. Red...Noble Farmerite
" " ...Baron Von Humboldt	S. Blue...Czar Peter
D. White...Prince of Waterloo	" " ...Grand Maitre
S. " ...La Vestale	"Rosy...Gigantea
"Yellow...Fleur d' Or	"Red...Garibaldi

In the Silver Medal collection of twenty-five by Mr. Warne whose collection was in six-inch, and not in eight-inches, as stated by our reporter last month, the following were most conspicuous: Ida, King of the Blues, Gigantea, Cleopatra, Mimosa, Macry, Czar Peter, Regulus, Double Charles Dickens, Lord Macaulay, Garrick, Non Par Merite, Casmus, Lord Wellington, Prince of Orange and Regina Victoria.

In the class of twelve Hyacinths there were General Pellissier, Sultan's Favorite, King of the Blues, Mimosa, Charilius, Maria Theresa, Eclipse and Ida.

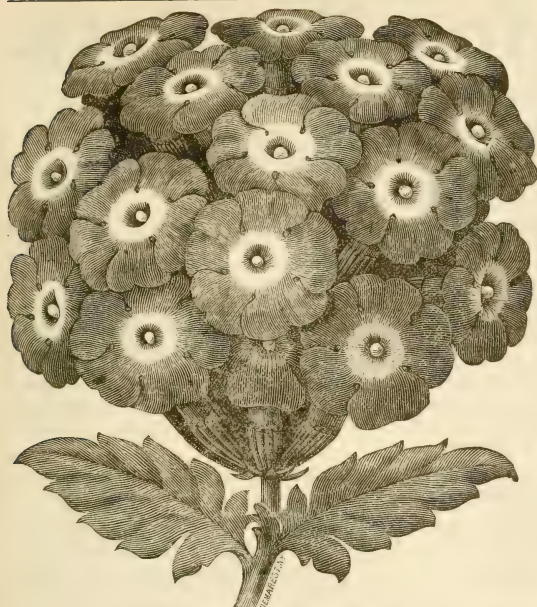
MARYLAND HORTICULTURAL SOCIETY.—At the March meeting Mr. Cook exhibited a number of new seedling roses, which were regarded as highly meritorious. Mr. Donald Grant, gardener to T. H. Garrett, made an admirable exhibit of flowering plants, ferns and orchids—the latter being out in great force. From the greenhouses of Patterson Park a good exhibit of flowering plants was made by Mr. Anderson, and Mr. Robert J. Halliday made a large and handsome exhibit. Among other exhibitors, as we note by a Baltimore daily paper, were Messrs. Hoen, F. B. Coral, John Down, E. Hermann, R. Cromwell, S. Feast & Sons, J. Pentland, Miss Patterson, Miss Weidy and Miss Hamilton.

GERMANTOWN (PHILADELPHIA) HORTICULTURAL SOCIETY.—At the April meeting there was exhibited by Mr. Jamieson, gardener to R. S. Mason, Esq., a beautiful specimen of *Cymbidium eburneum*, in a 12-inch pot, with about a couple of dozen of its large ivory-white flowers. Another interesting plant was a specimen of *Conoclinium lanthum*, trained up to a single stem for about 4 feet, and then suffered to make a round head. It seems just the kind of plant suited to such a mode of training. It was exhibited by Mr. Nelson, gardener to Mrs. Chandler. A number of other interesting plants were exhibited by other growers. Though the articles exhibited at this local society are never numerous, they are generally choice and instructive to those who attend the meetings.

HISTORY OF ORCHID CULTURE IN AMERICA.—At a recent meeting of the Massachusetts Horticultural Society Mr. E. L. Beard gave in full review the History of Orchid Culture in America. The papers prepared for the Massachusetts Society are always of a high class, and Mr. Beard's effort will rank among the best and give great value to the transactions of the society when issued.

THE SPRING SHOW OF THE NEW YORK HORTICULTURAL SOCIETY.—We have not received from any friend notes of the New York Exhibition, but the following from a correspondent of the Philadelphia *Ledger* may give some idea of what occurred :

"The flower show was opened at the Metropolitan Opera House this forenoon. The house is floored over as for a ball, and every foot of space, from the back of the orchestra to the drop against the rear wall of the stage, has been utilized. At the back of the stage is an arrangement of mirrors so bedded in palms and moss that the perspective, or the illusion, is very fine, and the arbors seem to extend to vast distances. Hundreds of Florida and Honduras palms, of a size and beauty never before seen here, are a prominent feature. The number of roses on exhibition is 85,000; bulbous plants, 65,000; shrubs, about 20,000. On the main floor are half a dozen immense pyramids, nearly 30 feet high, built up of potted roses, azaleas and orchids. The celebrated hybrid perpetual rose, 'Her Majesty,' from Short Hills, N. J., has a table appropriated all to itself. The flower is a pale pink, measuring $6\frac{1}{2}$ inches across, and is supposed to be the largest flower in existence. It was fully open a week ago, when it was cut and preserved in a cold frame for the exhibition; if the air is not too warm it is expected it will last until the end of the week. At the Broadway entrance is a miniature Dutch garden, with an infinite variety of tulips and crocuses, while not far from the proscenium arch are to be seen orange trees in full bloom."



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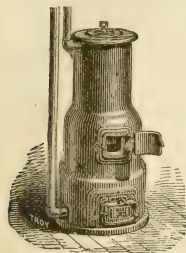
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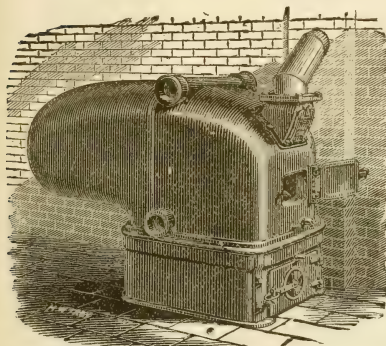
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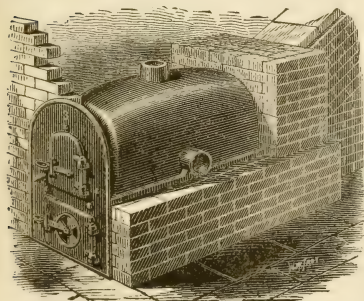
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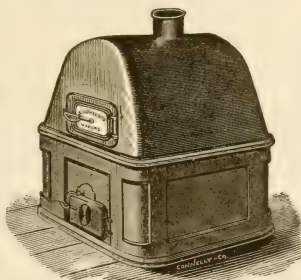


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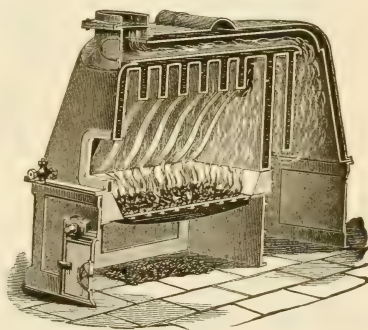
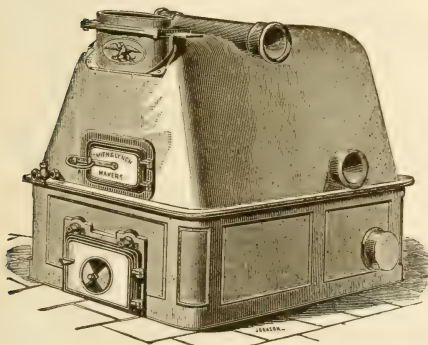


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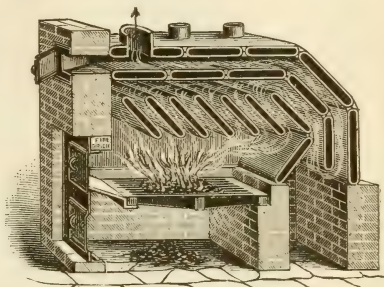
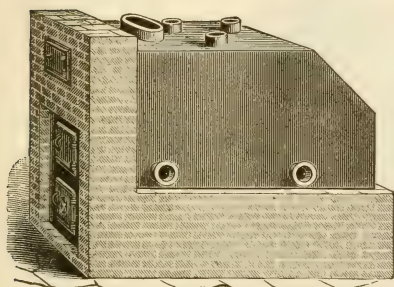
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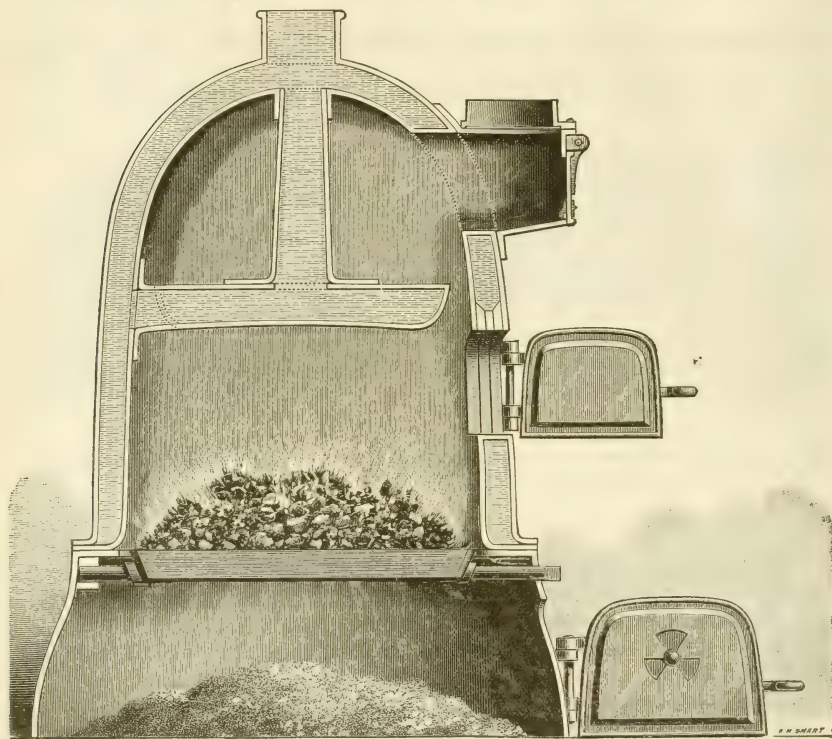
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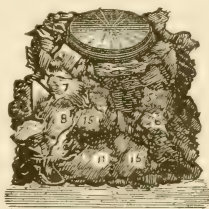
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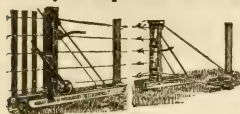
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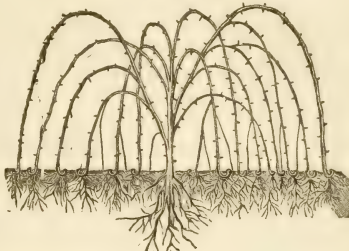
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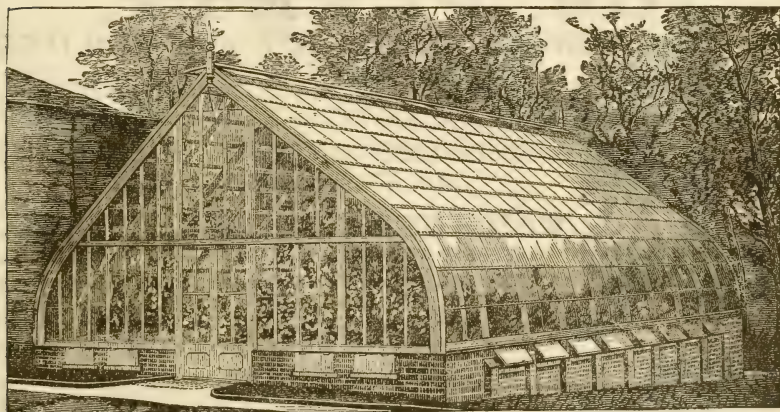
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Edited by THOMAS MEEHAN.

VOLUME XXVIII.

JUNE, 1886.

NUMBER 330.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

Among the many interesting ornaments to the flower garden is a class of plants which may be termed sand plants. They are plants with myriads of hair-like fibres, which require a large amount of moist air in order to properly perform their functions. This they cannot get in ordinary soils, especially those in which clay predominates. We often find them in swamps,—not because they love swamps for the water which the swamp contains, for they do not grow in water wholly, but for the abundance of moist air, which the silk-like rootlets can profit by. A few strong roots go down into the water, perhaps,—but the little capillaries referred to creep in among the swamp moss on the surface, or in among the pores of rotting logs, and there, out of the water, but in the moist air, they luxuriate. Now we can cultivate these plants in our gardens by imitating some of the conditions. We can set the plants in ordinary garden ground where the main roots can get good security against drouth, and then by making a frame around the plants—a sort of box without a bottom, fill it with sand in and around the branches, from which the young hair-like roots will push into the sand. We have a friend who takes great delight in this kind of culture. He lately called our attention to a mass of the beauti-

ful rosy and sweet scented *Daphne cneorum*, which had hundreds of flowers open in the first week of May. Alongside of it was a beautiful mass of the Bearberry, *Arctostaphylos uva-ursi*. Then there were the Heaths of the North of Europe, the *Hudsonias* of the sea coast and many other things that would make a succession of interesting objects the whole year through. *Rhododendrons*, *Azaleas* and other plants, often found difficult to thrive in ordinary ground, would grow admirably under this treatment. Those who have such plants not doing well, may try this plan at this season of the year.

Towards the end of June propagation by budding commences. This is very commonly employed with the rose; but ornamental trees and shrubs may be increased in the same way. Closely allied species must be chosen to work together.

The Mannetti stock suckers so much that it has been found a pest rather than an advantageous stock on which to bud the rose; but yet budding is so useful, giving us a chance to disseminate rare kinds freely and cheaply, that some stock has to be employed. The favorite of the English, the Dog rose, is wholly unsuited to our climate. The Prairie roses have been found excellent stocks. Other roses take well on them, and they do not sucker much. It is stout, very hardy, and it promises

to be a very popular stock for rare roses. Some have urged the American Swamp rose, *Rosa Carolina*, as a good stock, and of late years many of the standard roses that come to our country from Europe are worked on it. But to our mind it is even less adapted to our climate than the English Dog rose. The most successful for dwarf roses is still the Mannetti above noted. But great care must be exercised to keep down the suckers or they will kill the graft. After the graft has once taken on a good head, there is not so much trouble from suckers as in the earlier stages.

The rose bugs are apt to be very annoying at some seasons. The best remedy is to shake them off into a pail of water. The rose slug is often very injurious to the leaves—completely skeletonizing them. All kinds of rapid remedies have been proposed—whale oil, soap, petroleum, etc., but the best thing of all is to set a boy to crush them by finger and thumb. It is astonishing how rapidly they are destroyed by this process. This is true of most of the larger insects. Hand picking or crushing is by far the best remedy. But for all, people will ask for washes and remedies, and tobacco water or the kerosene emulsions recommended by Prof. Riley, are among the best things.

Peg down roses where a heavy mass of flowers is desired. The side shoots push more freely for this treatment.

Cut off the flowers of roses as they fade,—the second crop will be much better for the attention. Seeds of all flowering plants should be also taken off; all this assists the duration of the blooming season. Dahlias and numbers of other flowering plants are found to give good results under the pegging down plan.

Propagation by layering may be performed any time when strong vigorous growing shoots can be had. Any plant can be propagated by layers. Many can be readily propagated in no other way. Cut a notch on the upper side of the shoot, not below, as all the books recommend, and bend down into, and cover with rich soil. In a few weeks they root, and can be removed from their parents. Stakes for plants should be charred at the ends before using, when they will last for years.

Flower-beds should be hoed and raked, as soon as the ground dries after a rain. Loose surface soil prevents the under stratum drying out. Peg down bedding-plants where practicable. Split twigs make the best pegs. In dry weather do not water flower-beds often; but do it thoroughly when it is done. See that the water does not run off, but into and through the soil.

Mow lawns often, if you would have them green and velvety. It keeps grass weak, and small creeping weeds are encouraged to spread and crowd out the grass. To make up for this the lawn should have a dressing of some fertilizer in the fall. It encourages the weakened grass to fight the weeds.

COMMUNICATIONS.

NOTES SUGGESTED BY A VISIT TO THE GARDENS OF P. LORILLARD, ESQ., AT JOBSTOWN, N. J.

BY WM. T. HARDING.

A celebrated wit, (Sidney Smith, I think it was,) who evidently knew what was good, once facetiously remarked, that "God might have made a better fruit than a strawberry, but for some reason, did not." Be that as it may, few however, will attempt to gainsay the assertion who understand how very useful a fruit it has become in the hands of the skilful horticulturist, especially through the winter and spring months, under glass.

Our honored ancestors, poor simple souls, who may possibly have imagined they were highly favored with most of the good things of this world, in their day, patiently groped about where nettles grew, and among thorns in the wood, for the few small strawberries they perchance discovered there; or assiduously hunted for them among the unproductive kinds, which for convenience sake, had been transferred from thence into the garden.

We learn from honest old "Tusser's Five Hundred Points of Good Husbandry," written in the time of "Our Good Queen Bess," that the wild and inferior kind was then considered "excellent good." This indefatigable cultivator, who, from the inferences we draw from his famous maxims, appears never to have eaten the bread of idleness, but was always "up and doing," knowing that "the hand of the diligent maketh rich," seems to have found a suitable job for good Dame Tusser, too, and whom we may fancy was an industrious and frugal woman, and thus gives directions how his hopeful helpmeet should do it:

"Wife, into the garden, and set me a plot
Of strawberry roots, the best to be got;
Such growing abroad, among thorns in the wood,
Well chosen and picked, prove excellent good."

Although so many eventful years have rolled over the strawberry-producing world since then, we sincerely hope our right worthy predecessor

honest old Master Tusser, and his well-beloved wife—who seem to have sensibly pulled together—both in field and garden, derived as much real satisfaction in their day, when feasting upon the meagre, wild wood strawberries, as their successors are doing with the many improved varieties they regale themselves with now.

That Shakespeare, who also refers to them, during the reign of the "Virgin Queen," must undoubtedly have often picked them in their umbrageous habitats, in the woodlands of Warwickshire and adjacent counties, we may naturally infer, from thus alluding to them:

"The strawberry grows underneath the nettle;
And wholesome berries thrive and ripen best,
Neighbour'd by fruits of lesser quality."

And to prove how uncommon a sight it was to see strawberries under cultivation in a garden at that period, Shakespeare remarks:

"My Lord of Ely, when I was last in Holborn,
I saw good strawberries in your garden there;
I do beseech you send for some of them."

This poor and small fruit, about the size of ordinary cranberries, we may suppose, had a slight strawberry taste about them, and some of the odor; and but little more, when compared with the deliciously flavored, large, handsome and productive varieties under cultivation now. And under the most favorable conditions possible, the fruiting season of which must have been a brief one.

The most skilful herbalist of those days, John Gerard, who had charge of the botanical garden of the College of Physicians in 1587, for the cultivation of rare plants of medicinal value, and was maintained at the cost of "forty marks English money" a year, alludes to only three kinds under cultivation in 1597; and which appear to have been newly introduced from a wild state to the gardens, such as they were at that period, and thus speaks of them in the quaint phraseology of the time: "Strawberries do grow upon hills and valleys, likewise in woods, and other such places as be something shadowie. They prosper well in gardens; the red strawberry everywhere; and the other two, white and green, more rare, and are not to be found save only in gardens."

If the mind's eye will only glance back to the rudimentary strawberry beds of our forefathers, and think of what poor miserable sorts they had to make shift with, and then look at the thousands of broad acres of them in various parts of the country, of such splendid varieties as were never dreamt of, even fifty years ago, they will be amazed at the wonderful progress on every side.

Such a gradual state of development, or transition, from a lower to a higher type of plant life, as has been slowly going on from the time Virgil, Ovid, and Pliny first mentioned the fragaria, or strawberry, until it has finally evolved into the modern Keen's Seedling, Sharpless or Parry, ought to convince the most skeptical, that the doctrine of evolution is not the myth or chimera they would fain make us believe.

But oh, good reader, what a distance I seem to have been wandering away from the noted gardens of P. Lorillard, Esq., Jobstown, New Jersey; where I ought to have begun, and ended all I had to say about strawberries, when I commenced to essay the subject. So, without further promising, I will say it was my good fortune to call there, about the middle of March, when, to my great gratification, I saw one of the finest displays of forced strawberries I ever previously looked upon in these United States. Certainly, Mr. John Gardener, who so successfully manages this immense establishment, has much to be proud of, (modest man, as he is,) when able to demonstrate his horticultural skill, in the effective manner he does. For forced strawberries, without exaggeration I will candidly say, I never saw larger, more evenly formed, or finer colored fruit before. They were exceedingly heavy fruited, too; while their rich aroma, which was so agreeably diffused not only in the forcing houses, but even outside, for some distance from the sashes, plainly indicated how perfectly ripened and deliciously flavored they were.

Mr. G. informed me he began the forcing season with twelve thousand pots of strawberry plants, which had, of course, been prepared for that purpose during the previous summer. The first to ripen was Keen's Seedling, an English favorite, from which fruit was gathered for Christmas day. At the time of my visit, he was picking large quantities of Sharpless, whose superior qualities make it one of the most reliable kinds to depend upon for a sure crop.

My attention was called to a number of pots of thrifty looking Parry' strawberries, which from their general appearance, gave promise of being the strawberry par excellence, either under glass, or on the borders outside. It seems to possess a most desirable character, peculiar to that kind: namely, the habit of throwing up a succession of fruit trusses, which of course, will considerably prolong the time of fructification. That it will prove a valuable acquisition to the cultivator, no one doubts, who knows anything about it. As a

first early kind, Mr. G. pronounces the Keen's Seedling the best; and with which he invariably begins the season, as it sets its fruit well. It appears to take to the Jersey sand better, when planted out, than the Champion, an excellent early variety; and never fails to form good runners, in time to pot for the next season's forcing.

Seeing so much to admire under the sashes, besides strawberry growing, I can hardly conclude my remarks without briefly alluding to a few specialties, equally worthy of notice.

Grapes of the Black Hamburg type, looked well, both in pots and on the rafters. The bunches were of good size, and abundant. Of nectarines and peaches, it would be impossible to speak too highly of them, as such wonderful sights are seldom seen. More vigorous or fruitful trees, I venture to assert, would indeed be difficult to find. While some were lovely in their gay profusion of blossoms, others, again, were densely covered with young fruit, in various stages of development, from the size of peas up to that of nutmegs, some thousands of which had already been removed in the necessary operation of thinning. Later on, a similar process will be again required, so as to reduce the number to as many as the trees can properly ripen.

That the reader may form an idea of Mr. G.'s success in forcing, I will offer, as fair instances, the produce of two trees from among a number of similar ones under glass. From a Lord Napier nectarine, six hundred beautiful, full-sized, perfectly ripened, and most exquisitely flavored fruit, were gathered last year. While an Early Gross Mignonne peach ripened seven hundred as superb fruit, the finest flavor possible to produce. The same tree has now about a thousand as promising fruit evenly spread over it, as one would wish to see. Both peach and nectarine are imported from England, budded upon healthy plum stock.

Cucumbers, snap, or French beans, asparagus, mushrooms, tomatoes, etc., showed as good examples of culture as is usually seen growing in the vegetable garden, during the summer months.

The beautiful "Queen of Flowers" was in all her rosy splendor, and looked equally as charming in every hue, or shade of color, in which she appeared. Her brilliant robes are always becoming, whatever the fashion may be. While to her own true lover, her peerless attractions seem to have no equal under the sun.

When I see everything so well done around me, I feel as if I ought to say so; but I entertain too great a respect for the very efficient manager

of this first-rate place, to attempt to flatter him, if peradventure, his eye should ever fall upon these observations; yet, cannot refrain from saying he is unquestionably the best grower of Gardenias, I ever enjoyed acquaintance with. These exquisite flowers were perfection indeed, while the atmosphere surrounding them, was laden with the most subtle perfume imaginable. The English wallflowers, too—and who ever thinks of them without fancying they smell them?—were delightfully permeating one of the many glass structures in which they were blooming. The modest lily of the valley another sweet flower, with the unassuming *Boronia megastigma* of odorous fame, were delightful to inhale. And what with the blending of other sweet posies, I cannot believe the famed "Gardens of Gul" in the Orient, could possibly excel the smell of the roses, as we breathed the perfume in the extensive and gay greenhouses of Jobstown.

Mount Holly, N. J., March 29th, 1886.

LAWN MIXTURES.

BY ———.

Your article on Lawn Grass Mixtures is a little obscure as to intent. But taking it for granted, from the tone of your article, that you desire to warn your readers against purchasing lawn grass mixtures at seed stores, for fear of being, to use the mildest term, overcharged; I wish to say to you that you do the honest seedsman and your readers a great injustice. People, particularly editors, should be careful how they write or speak of matters, of which they know little or nothing. Because Prof. Beal found some red top in a mixture that he purchased, is it equitable to decide that all lawn grass mixtures are the same? You would think it a gross injustice if, because some unscrupulous nurseryman had deceived his customers, you, Thos. Meehan, should be rated in the same category. How did Prof. Beal decide that Herds grass was in the mixture? Did he pick out the seeds and then plant them? In that way only could he decide positively. If he sowed the mixture and found Red top growing in his lot, that would not decide it, as the seed may have been already in the ground. I believe very few respectable seedsman put Herds grass in their lawn mixture. Of my own knowledge I can state that there is not now and never has been, during the more than 40 years that I have been connected with the house of ———, any Red top grass seed in any lawn mixture sold by this house. Our

mixture has always consisted of Kentucky Blue, Green grass, which is the same seed grown in this section, a little Perennial Rye grass, Sweet vernal grass, and White clover, each one of first quality, sold for a number of years past at \$3.50 per bushel of 15 lbs., and all who purchase that mixture get the worth of their money, the GARDENERS' MONTHLY to the contrary notwithstanding.

Philadelphia.

[Our only intent was to emphasize the point often made in our magazine, and never objected to by our correspondent or any one, that one kind of grass makes a better lawn than the acutest mixture.

As to reflecting on the honor, integrity, or fair dealing of such an honorable firm as the ———, such an idea could enter nobody's head. The people evidently prefer mixtures. They pay more for mixtures than for one single kind of grass. They ought to pay more, because there has been the labor and trouble of all the extra work. If people will have it, there can be no reason why they should not be supplied with it, and charged accordingly.

It may be noted that Mr. ——— has not a very high opinion of Herdgrass as a lawn grass. Some will surely differ from him. On rich clay soils, especially near the sea, this makes one of the best possible lawns. It is information of this kind that ought to be obtained in the interest of gardening.

Since writing the above we have a note from the author, requesting us not to use his name or refer to his firm. This accounts for the blanks.—Ed. G. M.]

EDITORIAL NOTES.

EXPENSES OF AMERICAN PUBLIC GARDENS.—A debt of \$135,000 encumbers the Cincinnati Zoological gardens, and they will probably have to be sold out. Philadelphia was in somewhat the same fix, but subscriptions have been made sufficient to tide it for one year over its troubles, in the hope that something lucky may turn up. Public gardens in many cities are being felt as heavy burdens, beyond the ability of tax-payers to bear. All this comes about from two causes, chiefly. One is, a want of capacity in the management to combine instruction with that pleasure which ordinary minds appreciate; the other is, a want of capacity to understand that there is instruction and beauty to be had at small cost as well as at extravagant figures. Whenever any complaint is made that things are not as they

might be, the universal reply is, "give us more money." Only think, that the tax-payers of Philadelphia give the Fairmount Park Commission about a quarter of a million of dollars, and yet the commission grumble because this amount is so limited. They spend one-third of this sum in employing policemen at enormous salaries. The celebrated Kew gardens in England, cost only \$100,000 a year, and notwithstanding its immense treasures, a dozen policemen keep the whole thing in order. It is not difficult to see where our weaknesses come in.

IMPROVEMENT OF GROUNDS.—At a recent meeting of the Massachusetts Horticultural Society, Dr. Bowen proceeded to make some suggestions for the improvement of country homes. The first is, that the expenditure of money does not always bring a return in true beauty. He knew of one lawn which is dull, flat and uninteresting, though it has absorbed money enough to have made an earthly paradise of every other place in the village, had it been expended with good judgment. This is well worth remembering by those who desire nice grounds.

SINGLE ROSES.—Those which have already gained popularity in American gardens, are gaining ground in the favor of English flower lovers.

AMERICAN BEAUTY ROSE.—This is said by a correspondent of the *Florist*, to be a chance seedling, found on the grounds of Hon. George Bancroft at Washington, and sold for 75 cents, by a gardener to George Field & Co. who were six years before finding that the rose had any special merit.

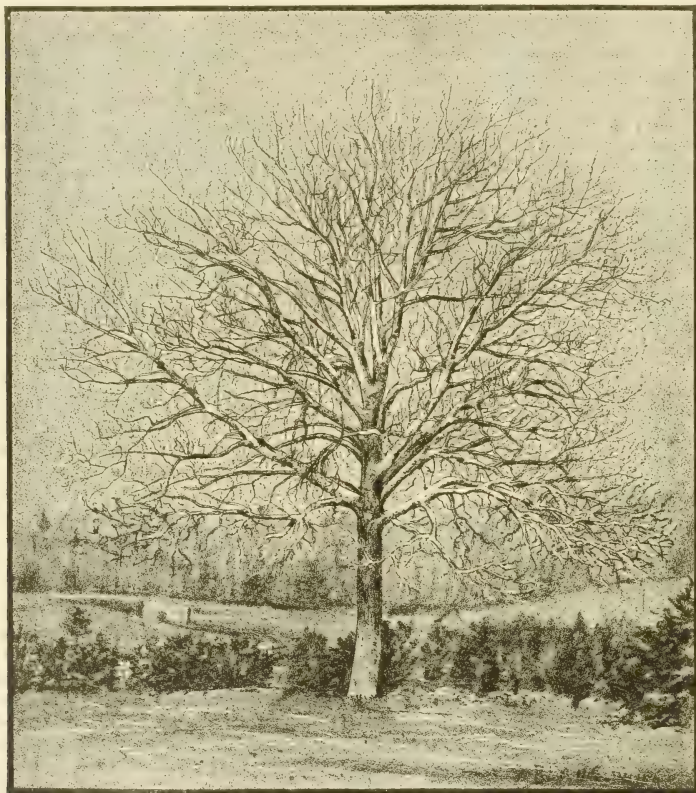
AMERICAN BUTTONWOOD, OR AMERICAN PLANE TREE.—The true character of American trees is rarely known, because in early life they have been crowded by others, and it is only when by the help of man a specimen here and there finds itself for a number of years alone, that we get to see its exact development. It is very rare to find a low-spreading buttonwood tree, because in early life they have lost their lower branches. We give herewith one of the best specimens we have seen. It is growing on the estate of Mr. George W. Childs, at his country seat, "Wootton," near Philadelphia. It is 80 feet in height, and is 10 feet in circumference 4 feet from the ground. The lower side branches extend 43 feet from the trunk, so that the head has a spread of 86 feet.

The English plane, *Platanus orientalis*, has a rather more regularly spreading character than the American, *Platanus occidentalis*; and is free

from the peculiar mildew which so often destroys the young shoot as it pushes from the bud, and, by reason of the second growth renders the tree often knotty and unsightly. This tree has apparently escaped this pest, and it is on this account that we have been tempted to give it as a rare illustration of a common tree.

brown and gradually drop off, and at last the whole tree is affected. White pines and Balsam firs are not affected. I think you published at one time a remedy for this disease, but do not know where to look for it exactly in your magazine."

[This seems to be trouble from Red spider which



Platanus occidentalis—American Plane or Buttonwood Tree.

SCRAPS AND QUERIES.

RED SPIDER ON EVERGREENS.—A correspondent near Boston Mass., writes: "There is some disease attacking our *Picea pungens*, White spruce and Norway spruce. I first noticed it on some White spruce, that came from a pasture in St. Johnsbury, Vermont. The lower leaves become

loves the Black spruces, Box bushes, and other evergreens. Very large trees are indefensible. Moderate-sized specimens may be dusted with sulphur on a hot day, sprinkling with water first to hold the sulphur.—Ed. G. M.]

HARDY ROSES FOR TORONTO.—The following query reached the Editor on the 15th of last month. It is only in rare cases that any inquiry

can get reply in the succeeding number that reaches the Editor after the 5th of the month :

"Please let me know through the May number of the *GARDENERS' MONTHLY*, what kind of roses would do best in this locality, where the temperature sometimes falls as low as 25° below zero. I want them to cover a six-foot fence. I would prefer the hybrid perpetual, if there are any hardy enough and strong growing enough. Any way, please let me have your opinion, and oblige

"Yours, TORONTO."

April 10th.

[We believe there is little difference in the hardiness of any of the true hybrid perpetual roses. We have known the old Baron Prevost thrive remarkably well as a sub-climber, in a very exposed situation. Those which have become mixed with the tea rose strain, are more tender. Some of the pure Noisettes will stand much severity, such as those related to the Old Champney and Musk cluster. The varieties of the old Sem-pervirens class, such as Belmont and Felicite perpetuelle, are as hardy as our prairie roses, which are again as hardy as any rose can be. The Ayresshire roses are good and very hardy ones, belonging to the species *R. arvensis*. Nothing is harder than the old Boursalt rose, and few more beautiful. The Sweet Brier and Dog rose, are admirable. It is a pity that these classes of very hardy roses have been neglected by improvers. We are still left with only the varieties of half a century ago to select from.

SNOW-COVERED TREES.—Ruskin finds much pleasure in studying the beautiful lines and figures formed by clouds. Trees when covered by snow, present equally beautiful objects of study. Each kind of tree has its peculiar beauty under these circumstances. Mr. Van Aken sends us photographs of such beauties, taken on the 7th of April at Elmira. A weeping birch makes a particularly pretty object.

A PROLIFEROUS OR FASCIATED LILY.—Mr. C. J. Power, of South Framingham, Mass., writes : "I send this day by express (paid), a box containing a spike of *Lilium candidum*, with twenty-two open flowers, thirteen buds and one undeveloped bud. This grew in a pot with four other bulbs, and is unlike anything I ever saw. The stem, as you will see, is flat, $\frac{3}{4} \times \frac{1}{4}$ inch. Do you think the bulb will continue to sport the same in the future? My only reason for thinking it might, is, that I have in my asparagus bed, a plant which for thirty years has grown with the same kind of a stalk, and with a very large tip. The bulb from which the spike I send grew, was a double one, one side producing the large head, the other sending a shoot which branched when half grown, and produced two spikes, with nine buds and flowers on each."

[This was a truly striking specimen. Probably it would prove hereditary. The *Lilium longiflorum floribundum*, is of this prolific class, and is constant.—Ed. G. M.

GREENHOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

A NEW ROSE PEST.

BY ERNEST WALKER.

It may be that what I allude to and shall attempt to describe is known to some of the readers of the *GARDENERS' MONTHLY*, who represent such a wide and varied experience. However, I use the adjective "new," for the reason that it was so to me, and because on a reference to some of the best treatises on the rose I did not find an insect of this description mentioned among the enemies of the rose.

During the winter of 1884-85, dropping in at

one of the greenhouse establishments of this vicinity, the proprietor called my attention to the singular behavior of some of the roses planted on the benches for winter blooming, and asked me to what source I might attribute the trouble. Perceiving at once that it was not a disease of the foliage and that it was not contagious, or of a rapidly spreading nature, I went to work examining. I pulled up some of the plants and found the "heel" enlarged by a warty excrescence or monstrous growth of the cortical tissue; the main roots were in like manner affected. On pulling up the plants I had noticed in the soil adhering to the heel and roots some small worms, and small round holes bored in the bark here and there.

Pulling open some of these warts I found the soft tissue, as it were, filled with minute white grubs or worms. On further examination I found these insects in various stages of maturity, and traced them to the full grown worm I had at first observed, and that the small holes I had seen bored in the bark were due to the skill of these little workmen, which are a half-inch—sometimes approaching three-fourths of an inch—in length, and in diameter about one-thirty-second of an inch. The body is articulated, smooth, hard, of a bony nature, and of a dull dirt color. The head was small in proportion to the body and provided with a pair of sharp mandibles. The legs were numerous along the length of the body, incurved and sharp pointed, seeming to characterize the insect as some species of the "thousand-legged worm." They evidently fed on the bark of the roots, and boring into the tissue there laid their eggs, while from the disturbance the bark grew distorted into these warty excrescences which became the nests of the young.

Some of the soil in which the roses grew was unmanured, and in this the roses were not affected. Others grew in a soil with cow manure in mixture, and in this the roses were healthy also, while the roses affected grew in a soil consisting partly of cow manure in which were beech leaves that had been used as bedding for the animal and were not completely rotted.

So I inferred that the presence of these particular insects in the soil was due to the beech leaves on which the eggs had been deposited and were now hatched out by the genial warmth of the greenhouse; and, following out their inherent instinct to multiply as well as to live, had gone to work on the roses, eating and laying eggs in the bark; though possibly or probably this is not the plant to which this insect is a natural enemy.

New Albany, Ind.

MIMOSAS—SENSITIVE PLANTS.

BY W. R.

The sensitive plants—*Mimosa pudica* and *sensitiva* are interesting and beautiful children of nature. As decorative plants, either for the conservatory, stage or dinner table, they can hardly be surpassed. A few of them interspersed among the flowering plants on the stage, have a charming effect, for besides the wonder raised in observing their tender leaflets shrinking and drooping at the lightest touch or gentlest breeze, they are very graceful and beautiful plants. The color of their foli-

age is wonderfully beautiful and fresh. They are easily grown from seed and are deserving of special attention from those who require a few plants for table decoration.

German town.

DENDROBIUM MOSCHATUM.

BY ALPHA.

The musk scented *Dendrobium*, *D. moschatum*, is a very beautiful epiphytal orchidaceous plant, and is a native of Pegu, where it was discovered by Dr. Wallich and introduced in 1828. It is a strong growing and robust species, the stems attaining a height of from three to six feet, and having oblong linear blunt alternate leaves, while the radicle flower stems are from four to seven feet in height, half of which is upright, the remainder being drooping, and on this part the nine or twelve flowers are produced, they are very splendid and of large size, being nearly four inches in diameter when fully expanded. In color the sepals and petals are of a rich crimson, faintly striped with creamy white, while the interior of the labellum or lip is richly feathered with dark crimson; the rich contrast of colors giving it a very striking appearance, and rendering it one of the most desirable plants in cultivation. The flowers emit a pleasant musk-like fragrance, which is very perceptible towards evening and from which circumstance the specific name was bestowed upon it by Dr. Wallich.

As this variety is of strong, robust growth, it should be grown in a pot, and given a compost of two-thirds sphagnum moss and one-third bits of charcoal well mixed. The best manner of potting the plant is to procure a pot of the required size, and over the drainage hole place inverted one of a smaller size, about large enough to occupy about one-third of the pot; around and above this carefully place in a quantity of broken pots about enough to half fill the pot, placing the larger pieces in the bottom, and gradually fill up with smaller. In potting, place the plant in the centre of the pot and keep it well elevated, about two or three inches above the level of the pot. If necessary support the plant by means of stakes. During its season of growth it should be grown in a warm moist atmosphere of not less than 60°, and as soon as growth ceases the supply of heat and moisture should be gradually reduced, while during its season of rest it should be kept both dry and cool in an average temperature of 55°; when growth commences the supply of heat and moisture should be gradually

increased. If the plants are placed in a dry cool situation as soon as their flowers are fully expanded, they will remain in perfection for a long time, but care must be taken to moisten the roots occasionally.

Propagation is effected by a careful division of the plant, and this should be done just before the plant starts into growth. The generic name is derived from "dendron," a tree, and "bies," life, referring to the way these plants fasten to a tree for support, and the specific alludes to the peculiar fragrance of the flowers.

DISEASES OF PLANTS AND THEIR REMEDIES.

BY CHARLES HENDERSON.

In undertaking a subject of such wide scope and vital importance, I realize fully my unfitness to instruct such a body of older and more experienced men, but as every one's experience is of some value, I trust you will not consider these ten minutes wasted.

In my observation, very few plants are attacked by insects or disease when in vigorous health. It is only when the vitality is impaired, or the growth checked by any cause, that they strike. Red spider rarely troubles plants when growing strongly, and even the mealy bug seems to pursue his ravages more vigorously when growth is slower during the winter months. As instances of this, we find that coleus are badly injured in mid-winter by mealy bug, but outgrow their attacks in spring and summer. Bouvardia is another case in point, being one of the worst plants we have for the mealy bug, yet when spring comes, and plant vigor asserts itself, they seem to a great extent to disappear. Mildew attacks your roses when a ventilator is raised carelessly on a cold raw day, and the chilling air strikes down on the soft growth, checking the flowing sap and leaving the plant in a debilitated condition, which invites the fungus known under this name. A marked instance of this occurred in our place years ago. We had a house filled with hybrid roses in full leaf and just showing bud; the house was ventilated by old-fashioned square ventilators that slid up and down. One afternoon they were carelessly left open too long, and the plants under the openings were slightly frozen. The frost apparently did but little injury, but in two days the plants that had been under the openings were completely covered with mildew, while the rest of the house was comparatively free from it. This showed

conclusively, that the affected plants were made liable to the mildew by having their vitality checked by the slight frost. Of late years, one of the most annoying diseases attacking plants is that affecting the carnation, and it is undoubtedly caused by working our stock year after year at a high temperature, which weakens the general vitality, and the disease, be it a fungus or an insect, quickly follows. In the fall of 1883, we had a surplus of two varieties of carnations, and rather than throw them away we "heeled" them in a cold frame, putting straw mats on the glass in extreme weather. They wintered well, and in March we put in a few hundred cuttings of each. We marked them, and last winter they were the best plants we had, not one of them dying off, while we lost hundreds of the same kinds in our regular stock; and I firmly believe that if this plan was adopted of wintering carnations intended for propagation, that the "carnation disease" would disappear. Another and perhaps more practicable way of avoiding the difficulty we have practiced for years; and that is, to propagate our young stock as early as possible in the winter, and, after they have become established, knocking them out of the pots and putting in shallow boxes in cold frames. This gives them some of the needed rest, and the good effect is very marked. This theory of weakened vitality being the cause, and not the consequence of most plant diseases is, perhaps, best borne out in the case of the "black rust, or verberna rust." It is a common mistake for growers to use for planting out, such plants of verbenas as have been propagated in mid-winter. These plants are usually held in the same pots long after they become pot-bound, and consequently are stunted, and perhaps diseased, when set out. Although they may appear to grow strongly at first, yet the taint is there, and when midsummer comes, with its protracted spells of heat and drouth, the vigor is gone completely, and the insect producing the disease we call "rust" appears in myriads. The true plan is to use for planting, the last propagated plants in spring, these sustaining no check, grow right along until midsummer, when it is necessary to cut them severely back, and fork in a good dressing of manure as close to the plant as possible, followed up by a thorough soaking of water. This last, of course, if the ground is dry, which is almost invariably the case in August. Plants so handled grow vigorously, avoid the fatal check, and give healthy cuttings when needed in October. The "rust" that is found on heliotropes, bouvardias, etc., is proba-

bly the same thing, or in any case is produced by the same cause. This is particularly noticeable in heliotropes, as they become rusted at once if pot-bound. The insect producing "black rust" is invisible to the naked eye, but under the microscope somewhat resembles a cockroach in shape and general appearance. When plants are affected, a syringing twice a week with fir-tree oil is effective in checking it, but as in everything of this kind, prevention is the best remedy.

Celery Rust.—Although this is a little out of the florist's line, yet a valuable lesson may be drawn from the causes that produce it. The celery "rust" is occasioned by anything that injures the roots, either an excess of rain or a drouth—either cause kills the working roots, and the yellowing up or "rusting" of the leaves soon follows. In the open field this is beyond our control, but the hint given is invaluable in operations under glass, where watering is under our command. There is but little doubt that nine-tenths of the failures in rose growing for flowers in winter is traceable to the working roots of the plants being destroyed by being kept too wet or too dry.

Green Fly.—Of course we all know that this insect can be destroyed by fumigation with tobacco, but in cases where cut flowers are grown, particularly roses, tobacco smoke will take the color out of the buds, and to a great extent lessen their value. The "fly" can be kept down by simply spreading tobacco stems about the house, and giving them a dash of water whenever you are watering. The slight fumes that are constantly arising from the tobacco will keep the green fly entirely under subjection. We kept a rose house, 312 feet long and 20 feet wide, entirely free from "fly" with a layer of tobacco stems, 10 inches wide and 2 inches deep, running the full length of the house. It is not safe to put the stems on the bed where plants are growing, as sometimes there are ingredients used in curing the tobacco which will cause injury to the plants. I have known several cases of this. The stems need renewing every six weeks.

Mealy Bug.—We have tried various emulsions of kerosene oil for this pest but with indifferent results. Alcohol, which is the basis of most insecticides for mealy bug, will do the work, but it is too expensive for general use. The imported preparation known as "Fir-tree Oil" is by far the best and most economical remedy we have yet tried. It kills the bug and its eggs and does no practical injury to the plants. In using the Fir-

tree Oil or any similar insecticide, it is better, when practicable, to dip the plants in the preparation. In my experience one dipping is as good as ten syringings and much more economical. A common error in the use of all insecticides is the want of persistence in their use. It is much better to use a weak application of any insecticide frequently than a stronger dose of it at less frequent periods. For example, we have always found it more effective and safe to fumigate with tobacco smoke our houses twice a week lightly, rather than once a week and more heavily.

Rose Bug.—This most dangerous insect first appeared in quantity about New York seven or eight years ago, and probably you are all familiar enough with it by this time. It is about as large as a lady bug, but is brown in color. The perfect bug feeds on the tops, eating the leaves and doing some injury, but the great mischief is done by the larvæ feeding on the roots. This is a white grub about $\frac{1}{4}$ in. long which is hatched in the soil by the bug. Its presence at the roots is quickly shown by the yellowing and dropping of the leaves, which by the inexperienced, may be attributed to the ordinary causes of over-watering or too high a temperature, but if a plant is dug up dozens of the grub will be found about the roots. The only remedy seems to be to pick the perfect bugs from the tops by hand. The Rose bug has not done so much damage in the last few years, as the now general practice of planting new stock each year seems to have disturbed and prevented their breeding.

Black Ants.—These symbols of industry will cause considerable injury and annoyance in a greenhouse if allowed to gain headway. They tunnel the soil in pots and benches, and carry the soil up the stems of the plants, and encrust with it the mealy bug and scale, which they pretend to devour but never diminish. They can be readily exterminated by dusting the large runs of them with Pyrethrum, applied with a bellows. It is useless to spread it around by hand, as they are killed by breathing it, and it must be distributed in fine particles. In the winter of 1883 our place became badly infested with ants, and only the persistent daily use of Pyrethrum for three months exterminated them.

Mildew.—The only remedy we have ever used for mildew is sulphur, either by putting it on the pipes so that the fumes will be thrown off by the heat, or in the liquid form as follows: 1 lb. lime and 1 lb. sulphur in 2 gals. water; boil this down

to one gallon, and use a wineglassful of this to 5 gals. of water, and syringe the affected plants twice a week. This is particularly useful in summer when not firing, and is a certain remedy. It has been recently suggested to use linseed oil mixed with sulphur for painting the pipes, it being claimed that in this way the sulphur would do no harm to the plants. Now, while the linseed oil may be a good thing to mix with the sulphur to make it stick to the pipes, it is certainly of no other benefit. It is well known that sulphur mixed with water alone is used on hot water pipes in greenhouses and graperies, as an antidote against mildew and red spider, without injury to the plants. It has been our practice for years to sprinkle the pipes with water and then dust the sulphur on while wet, and I have never seen the slightest injury to roses or other plants by this manner of applying it. Many serious results have occurred by burning sulphur in greenhouses or applying it on brick flues, where the temperature is perhaps 300°, but I never heard of injury to plants resulting from its being applied on hot water pipes where the temperature is usually under 200°.

Black Mildew or "Black Spot."—I have had scarcely any experience with this, as we never have had it on our place, except in a slight degree on some hybrid Tea roses. I have noticed, however, that it is most prevalent in rose establishments where the stock is grown for propagation, in shallow benches, in soil without manure. It is almost unknown where the plants are grown for cut-flowers, and consequently are liberally fed. In all probability this continued starving leaves the stock in such condition that it invites the "black spot." There is a formula which is said to check it, but it has been kept a secret by the discoverer.

In conclusion, I would say that, in my opinion, the ventilation of a greenhouse has more to do with the health of its contents than any other one cause. This is particularly true with roses. If air is given on a rosehouse, day and night during July and August, there will be little trouble with mildew, as the cool night air and the action of the wind all tend to toughen the fibre of the wood and leaves and give strength of constitution to the whole plant, so that when the spores of mildew and other fungoid diseases strike, they do not take root, but glance off harmlessly from the hardened and fortified foliage. *Jersey City Heights.*

[Read before the American Society of Florists.
—Ed. G. M.]

EDITORIAL NOTES.

FLOWERING OF AGAVE AMERICANA AT AUBURN, NEW YORK.—This is the century plant. In old English greenhouses it took a century for a plant to flower. In its native country it flowers in about ten years, and, under culture, generally between this and a hundred, usually nearer the hundred than the ten. This one blooming is in the garden of Mr. George Casey, at Auburn, New York, and is a matter of great interest with the people there. It has pushed its flower stalk three feet above the roof of the greenhouse, being in all about eleven feet high. It will probably be ready to open its flowers about July 1st. Its present rate of growth is about three inches a day. It is believed to be about sixty-two years old. It has been in the family of the present owner about fifty years.

Having acquired its full growth, it finally produces its gigantic flower stem, after which it perishes. This stem at maturity is surrounded with a multitude of branches arranged in pyramid form, with perfect symmetry, and having on their points clusters of greenish yellow flowers, which continue to be produced for two or three months in succession. The native country of the American aloe is the whole of America within the tropics, from the plains, nearly on a level with the sea, to stations upon the mountains at an elevation of between 9,000 and 10,000 feet. From these regions it is sometimes transferred to other temperate countries.

Independently of its beauty and rarity, this plant is applicable to many useful purposes in warmer climes. Its sap may be made to flow by incisions in the stem, and furnishes a fermented liquor, called by the Mexicans, pulque. From this an agreeable ardent spirit called vino mercial is distilled. The fibers of its leaves form a coarse kind of thread, and they are brought to this country under the name of pita flax; the dried flowering stems are almost an impenetrable thatch; an extract of the leaves is made into balls, which will lather water like soap; the fresh leaves themselves cut into slices, are occasionally given to cattle, and finally the centre of the flowering stem split longitudinally, is by no means a bad substitute for a razor strop, owing to minute particles of silica forming one of its constituents.

AMARYLLIS BELLADONNA.—This, one of the most beautiful of all the family, rarely blooms. We continually see plants without having seen a flower for years. A correspondent of the *Garden*

tells how he treats it, and his experience may be of value to American growers :

"It is stated in old books that the easiest way of flowering this *Amaryllis* in this climate is to keep it in pots, which may be placed under a close glass frame in August till it flowers; after that it should be plunged in the open border, or the pots may be kept in an airy greenhouse during winter and placed in a stove without water at midsummer. This agrees with the practice followed many years ago by an old gardener of my acquaintance. He obtained imported Dutch roots as soon as they could be had—about the early part of September, and then potted them singly in $4\frac{1}{2}$ -inch pots, using a compost made up of loam, sand and manure, in equal parts. Freshly imported bulbs will be certain to flower, and when they have done blooming they commence to grow; they were then shifted into good sized pots, using such a compost as that just named. Then a few short stakes were placed round the pots and matting tied round them to keep the leaves from injury; then they were placed in any suitable spot where plenty of light fell on them, and watered when required. In such a place the bulbs remained until spring, when more space was afforded them, and they were treated to plenty of light, water and heat. As soon as the foliage began to decline water was discontinued, but extra heat was given and as much light as possible, and so until the leaves had decayed, when the pots were removed to a dry shed and there allowed to remain until the blooming season came round again. As soon as coming activity manifested itself, the bulbs were placed in the stove, and every one of them blossomed. To have extra fine specimens he would sometimes place six or eight bulbs in a large pot, and found that they flowered well and were highly effective. I have heard many complaints that this charming *Belladonna Lily* is very shy of bloom, but this is surely a misconception, and must result from unsuitable treatment."

A BASKET OF PANSIES.—Among arrangements of flowers for the sitting-room table, none have truer charms than may be gained from a handful of some simple flower placed loosely and easily in a receptacle of quiet form and color, such as the white china basket of Pansies here engraved. Pansies should be largely grown for cutting; they last longer in water than most summer flowers, and their varied markings, rich coloring, and velvet-like texture make them worthy of the closest examination. They have an almost human interest from the varying expression of their innocent face-like flowers, while not the least of their charms is a delicate and delightful scent. They should be cut long, with a liberal supply of stem and leaf, when they will readily fall into natural, easy bunches; cut with the flower-stalk alone, they are less easy to manage and never look or last so well.—*Garden.*

NEW OR RARE PLANTS.

NEW VARIEGATED MYOSOTIS.—A remarkable variety called "Sensation" has appeared among German florists. The leaves have two stripes of clear white on each side of the green midrib, which, in contrast with the blue flowers, give a variegation that makes this Forget-me-not likely to be a great favorite with cut-flower workers.

LEPTOSYGNÉ MARITIMA AS A WINTER FLOWER.—Mr. Thorpe thinks this California annual may become popular for winter cutting.

BISMARCKIA NOBILIS—A new genus of *Palms*.—Hildebrand & Wendland in 1880 dedicated this new genus to Prince Bismarck, and a colored plate now appears in the April *Gartenflora*, with a full description of the species. It is a dwarfish species, with something the general appearance of our *Pritchardia* or *Washingtonia filifera*. The seeds were collected in 1879 in West Madagascar.

ROSE, HER MAJESTY.—It appears this new rose is not without a rival. The *Journal des Roses* says that it does not claim this, but presents itself simply as the rival of Paul Neron.

CHRYSANTHEMUM, BOULE DE NEIGE.—Pure white chrysanthemums are common, but the English growers think they have a good thing for all in Snowball. The flower is perfectly round, about $3\frac{1}{2}$ inches over, and the broadly ovate petals placed so regularly over one another, that one might regard it as a camellia if the petals were broader. It was raised in France, where it goes under the French name, *Boule de Neige*.

SCRAPS AND QUERIES.

THUNBERGIA HARRISI.—A remarkable specimen.—Mr. Edward Norman, Lee, Mass., writes; "When I wrote to you about *Thunbergia Harrisii*, I promised to send you the large spike when it got through flowering, so I have sent it with this letter. There have been about 1,500 flowers opened on that one spike, and we have had several with 300 and 400 on. The plant is still in flower and not a sign of red spider or mealy bug on it. Every one that comes here wants to know how it is that we keep it so clean. I tell them, nothing but clean water and plenty of it."

[This was certainly a remarkable growth. The piece of stem sent was about 5 feet in length, and had hundreds of scars on its surface where flowers had been.—Ed. G. M.]

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

Watch newly planted fruit trees. If they have but a few weak leaves only, it shows the roots have been injured; then prune them severely, which will make them grow freely. It should be a main object to make all transplanted trees not merely have leaves, but have new shoots at the earliest possible moment. If they are growing very well, they may be allowed to perfect a few fruits. Overbearing on a newly planted tree is, however, one of the best ways of making it stunted for years. Newly planted trees often suffer apparently for want of water, when really there is much moisture in the soil. This usually comes from the earth not having been packed in tightly about the roots at planting. Unless the roots actually touch the earth, they absorb moisture with difficulty. Hence a good plan in such cases is to pound the earth with a heavy rammer round the trees. After this practice it will be often noted that the earth looks quite damp in the morning, where it seemed hard and dry before. This is simply the pulverizing of the soil so much insisted on by gardeners of the old school.

Do not allow weeds or grass to grow rank about newly planted trees, as they take moisture which is all needed by the tree, while grass or sod kept low keeps the surface cool, and takes little moisture; rank growth though it may keep down temperature, drinks too much, and this is its objection. Stones around newly planted trees are excellent, provided we are sure no vermin are harbored by them. They keep cool and yet take no moisture away.

Strawberries, when grown in hills—the most laborious but most productive method of growing them—should have runners cut off as they grow, and the surface soil kept loose by shallow hoeings occasionally. Short litter, half rotten, as a mulch, is also beneficial. Lawn mowings are often applied, but with little benefit. Where they are grown in beds, they should not be too thick, as they starve one another, and the crop next year will be poor.

Blackberries are not always ripe when they are black. Leave them on till they part readily from their stalks.

Currants are so easily grown as to require few hints for their management. If they throw up many suckers, take out a portion now, instead of waiting till winter to cut them away. The currant borer is a great pest, eating out the pith of the young shoots, and causing them to grow poorly, and bear but small fruit next year. Gummy "fly paper" is, we think, the best thing to catch them.

In the vegetable garden the hints given last month may still be regarded as seasonable. With most people the chief anxiety is to have plenty of moisture in the ground. Except in small amateur gardens artificial waterings are seldom resorted to, except where some extra fine sample is desired. In these cases—a tomato for instance—a basin is made around the plant, water poured in, and a few hours after the earth drawn in over the basin. By having this loose earth over the watered part the moisture will not dry out as it generally does when poured on at the surface. Indeed, loose earth on the surface is one of the best means for keeping the soil from drying, and hence in the best gardens the hoe and the cultivator are kept at work quite as much with this object as to keep down the weeds.

COMMUNICATIONS.

THE SCUPPERNONG GRAPE—A CORRECTION.

BY H. W. RAVENEL.

Mr. T. V. Munson, in his recent article in May number of *GARDENERS' MONTHLY*, after describing a supposed new species of grape in Florida, uses the following language:

"Just at this point, let me make one point clear as to Scuppernong and Muscadine, or *rotundifolia* grapes, in the South. Generally it is understood, that when the term or phrase, Scuppernong grapes, is used, that it applies to all cultivated varieties of *V. rotundifolia*. The unguarded use of the term in Mr. H. W. Ravenel's 'History of the Scuppernong grape' (*GARDENERS' MONTHLY* for August, 1885, page 238), wherein he says: 'All the cultivated Scuppernong vines now in existence, are parts of that original vine found in N. C.', leads to confusion, unless this is to apply purely to that variety very commonly called Amber; then he is

correct. Scuppernong is one of the common names for this class of grapes, along with Muscadine as another. However, it would have avoided the danger of confusion, if Amber had been used, as it applies to no other of this class or species."

This criticism astonishes me. In proof that my use of the term, Scuppernong, as applicable to one particular variety of grape, was not an "unguarded" expression, I will state that I have been familiar with the name all my life, and have been cultivating it extensively for about forty years. During that time, I have seen and read most of the agricultural and pomological journals, in which there are frequent allusions to this grape; also the catalogues of nurserymen who offer it for sale. And now, for the first time, I hear that the true name of this grape is "Amber," and that the people in North Carolina who first found it and gave it a name, and those in South Carolina and Georgia, where thousands of vines are cultivated, are in error. All through the South Atlantic States, as far as I have ever heard, the name, Scuppernong, is applied strictly and exclusively to one variety, and not to a class of grapes, as strictly and exclusively as the name of Concord, or Delaware, or Catawba, is applied to other varieties. I never heard it called Amber. In fact, the name of "Amber" is already appropriated to another and very different grape.

There are only a few other varieties of this species in cultivation, and they are all known by specific names, as Flowers, Thomas, Tender-pulp, Peedee, &c.—all dark colored, except the last. When the term, Scuppernong, is used, it is always intended to apply to that one white-fruited variety, which, to claim purity of character, must be a lineal descendant of, and by continued propagation, "parts of that original vine found in North Carolina."

So I think I am justified in saying, it was not an "unguarded" use of the term. Had I called it "Amber grape," none of those for whom the article was written would have understood me. *Aiken, S. C.*

COLD STORAGE OF FRUITS.

BY N. HELLINGS.

Your letter of the 2d duly received, and will endeavor to give you the information you desire. I have been successfully running the fruit house on the banks of the Delaware river above Bristol for many years, and I have put up quite a number of buildings on a similar plan in other States, and in my opinion ice is far better for keeping fruits than a chemical process. To illustrate my statement I

would inform you of a house in Baltimore conducted by the chemical process, and a party from Washington had 4,000 barrels of apples placed there on storage, and their apples not coming out satisfactorily, they wrote to me to ship them twenty-five barrels last April just as they came from the tiers, and notwithstanding the exposure of fruit in shipping to Washington, they claimed that our apples were twenty-five cents better as regards scald and twenty-five cents as regards rot, making the stock fifty cents preferable, and their apples and our stock came from the same section of the country. Then again, I heard of another party putting a lot of apples in one of the chemical buildings. They came out in bad condition. Some time ago (March, '86) I brought down to the store a few apples that were put away in my building in the fall of 1884, and they looked very well, especially in regard to style. I take pleasure in sending you a lithograph of my country-seat where one of my fruit houses can be seen. I also send one to Hon. Marshall Wilder, Dorchester, Mass.

Philadelphia, Pa., April 8th, 1886.

[Col. Wilder had some idea of preparing a paper for the Massachusetts Horticultural Society, and to aid him we wrote to Mr. Hellings, to which the above is a response. Col. Wilder did not have the occasion, so we take the liberty of giving the letter here. We may remark that Mr. Hellings is one of the pioneers in the cold storage method of preserving fruits, a subject which he has pursued in the most intelligent manner from the earliest inception of the idea to the present time. His experience is therefore of special value to us all.—
Ed. G. M.]

THRIPS—LEAF-HOPPERS.

BY DUNCAN RHIND.

I forward Prof. Riley's reply to specimens of insects sent to him, and you will please observe he recommends the use of hellebore:

"U. S. DEPT. OF AGRICULTURE, DIVISION OF ENTOMOLOGY, }
WASHINGTON, D. C., April 27th, 1886. }

"MR. DUNCAN RHIND:

"Dear Sir—The specimens you sent with your last favor are not Phylloxeras, but belong to the family known as Leaf-hoppers (Tettigoniidae). The particular species is *Erythroneura vitifex* Fitch, popularly known as 'Thrips,' and often greatly injurious to the foliage of grapevines, especially in graperies. Application of hellebore is a good remedy and has often been recommended for this insect; but there are a number of other remedies known, *e. g.*, dusting with lime, or syringing with strong tobacco water, or soap-suds,

or diluted kerosene emulsion, etc., or fumigating with tobacco. The latter remedy can, of course, only be applied successfully in graperies.

"Respectfully,

"C. V. RILEY, Entomologist."

The hellebore remedy is recommended in E. B. Ellwanger's "Book on the Rose," as the rose thrips and grape thrips are only different species of the same family. The thrips eats the poison or the poison eats the thrips, which amounts to the same thing. However, I have used strong tobacco water successfully for years on roses outside for thrips; but hellebore for the slug.

In answer to "Cultivator's" suggestion that thrips is the result of insufficient moisture in our graperies, I would state that the facts do not bear out the inference. One of the graperies which I referred to in my former letter had a man (so the gardener told me) continually syringing the vines. Of course he prevented them from multiplying rapidly. His supply of water gave out, and his vines were the worst infected of any I saw. Now, had he syringed once, twice, or thrice daily, according to the weather, and kept his borders always moist, I presume he would have had enough water to carry him through the season, and of course used some other remedy for thrips.

"Cultivator" combines red spider and thrips as existing under the same conditions, which would lead one to infer that he means thrips adonidum, which is frequently found on Azaleas and several other greenhouse plants, often along with red spider; which, if so, is altogether a different insect, and foreign to the present article. As to his persistent advocacy of the sulphur cure, as directed by him in a general sweeping way, most all the graperies infected are mere glass structures without any manner of heating apparatus. How then could we apply sulphur to hot-water pipes?

Further, I should like to know who the practical gardener is who would go to the expense and labor of getting a boiling heat once or twice a week all summer long to keep down thrips? It would never work. I admit sulphur is greatly used by all in this profession, and I have used or seen it used in the manner described by "Cultivator" for nearly twenty years, but it is not practicable in the present instance. Of course all gardeners use it to keep down mildew in some form.

In looking over some of the back numbers of the MONTHLY I found an article by a reliable and first-class gardener, on Thrips (Mr. J. Peattie), on page 113, April, 1882. The reading of which is worth a year's subscription to any person who is

troubled with thrips. I would have been glad to have remembered it, but, not requiring it at the time it appeared, it was forgotten.

Torresdale, Pa.

FLORIDA FRUIT CULTURE.

BY DR. LORING W. PUFFER.

While visiting at Belleview, Florida, in February last, I saw in the garden of Mr. James Penfield half a dozen grape-vines of the exotic varieties that were alive to the tips of the shoots, and this without the slightest protection. In this vicinity, as well as elsewhere in many sections of the State, the thermometer had previously showed a temperature of 18° for three days. The soil was the poorest in that vicinity, and the vines had made but a feeble growth. Orange trees of one and two years were many of them killed, it being particularly true in impoverished soils or where the land was naturally poor. I have not as yet been able to account for the escape of the vines, except on the theory of bottom heat, the temperature of the water from the wells—from 30 to 70 feet deep—being uniformly 65°. With the great amount of moisture in the atmosphere I do not see how the exotic grape can escape mildew, even with the temperature and soil in a proper condition for healthy plant growth. I should be pleased to read of any experiments with the Hamburg or the raisin varieties. The great error in Florida fruit culture just now appears to be in trying to raise tropical fruits in a semi-tropical climate. Many of the people there resident are so because of the danger of living North, and their hopes, and many times their income or livelihood, depend on the fruit crop. It is simply cruel, then, to hold out hopes of success when the fact is that it is almost a lottery. In short, it is gambling with nature.

In the above I do not refer to orange culture. Pine-apples were killed by the acre, and when they had the best protection it was possible to give. This was at Eustis, and in the heart of the lake region. Florida is a State of great possibilities, but it will not do to rely on Providence too much. The climate will always make it a proper, popular and indispensable resort for the well and wealthy, as well as invalids in the winter, and when touched by the master hand of the gardener and florist will, in twenty years, in brilliant floral beauty rival any spot on the globe. It must not be supposed, however, that it will be the home alone of the wealthy, for the industrious poor man can get a living here with less labor than at the

North, for his wants are less. But I fear that I will weary the reader.

Brockton, Mass.

[The Editor may be permitted to endorse these suggestions. Tropical plants should only be experimental, and the experimenter should be one who can afford to lose. The orange and lemon are not tropical fruits, but sub-tropical, and of course just suited to a sub-tropical climate like Florida. We should rather pin our faith on a crop of tea leaves than on a crop of pine-apples.

The atmospheric moisture is just what suits the foreign grape. It is the atmospheric moisture which makes a cold grapery so successful, when the plants do not thrive in the open air. The exotic grape thrives tolerably well in Canada—though so much further north than Philadelphia, where it will not thrive at all—because the Canadian atmosphere is more humid.—Ed. G. M.]

EDITORIAL NOTES.

TRAINING RASPBERRIES.—We are so accustomed to see our small fruits grown in the profit-and-loss style of market gardens that only the few are privileged to see how tastefully they are often trained and cared for in the gardens of real lovers

of fine fruit. It does not pay the mere market man to take extra pains for superior fruit, as a general rule—but it pays the amateur in pleasure a hundredfold to produce something better and nicer than his neighbors are accustomed to enjoy.

In regard to the raspberry, we seldom do more than train them flat against trellises, or bunch them together against a stake. The German gardener trains them in innumerable ways, and finds profit in all. The illustrations with this are from the German *Gartner-Zeitung*.

1 shows how they are trained over a wire or slat arch; in such cases, of course, the plants are set on each side. Just how they are tied for bending over the trellis so that every part is covered, is apparent from the cut.

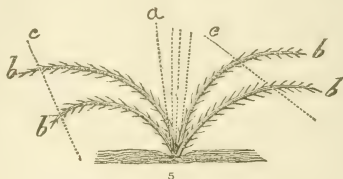


2 represents a training in U shape. This extends along the whole line, so that at the end of the line, in spring, we look along the line as through a deep furrow.

In 3 we have the top simply spread out by the aid of a hoop; the branches or canes being shortened a little.

4 represents the canes nailed against a fence and trained fan-shape.

5 is a common form of garden culture. The canes, *b b*, are bent over, which permits the young canes, *a*, to grow up and get the full benefit of air and light. They are usually shortened somewhat according to the earliness of the fruit desired. If the canes are cut very short, as at *c*, on one side they will fruit later than if shortened to the proportion at *c* on the other side. If the raspberry is shortened severely they become summer or fall bearers. In kinds known as fall bearing



they have to be cut very low to get the full benefit of the variety.

THE MILDEWS OF THE GRAPE VINE.—The *Rural New Yorker*, of January 30th and February 6th, gives a complete illustrated chapter on this subject by Prof. C. V. Riley. The powdery mildew is caused by a minute fungus called *Uncinula spiralis*, which flourishes best in a dry atmosphere. The foreign grape easily suffers, except when growing in the moist atmosphere of a grapery. The downy grape mildew is *Peronospora viticola*, which flourish best in moist surroundings.

PHYLLOXERA IN FRANCE.—Prof. C. V. Riley, in his annual address before the Entomological Society of Washington, says that the French have grown almost indifferent to the ravages of this insect, since the introduction of the American vine

for stocks for their own varieties. Hundreds of square miles are planted with grapes grafted on the resistant American stock. Yet they continue their absurd Phylloxera laws prohibiting imports of all kinds of plants from America for fear of introducing the insect.

SOME REMARKABLE RUSSIAN APPLES.—Prof. Regel, in the *Gartenflora*, describes some very remarkable Caucasian apples, one of them larger and finer than the well-known Alexander. They were cultivated by a gardener named Ramm, at an elevation of over 3,000 feet, even in that cool country. He calls them Ramm's Caucasian Rambour-Reinette, Ramm's Borschom Reinette, and Ramm's Susser Apfort.

AMERICAN PEACHES IN ENGLAND.—Alexander and Hale's Early, a correspondent of the *Garden* says, are undoubtedly the best for affording the earliest supplies of fruit, whether in heated or unheated houses, these being extra early and of good size and quality. True, the flowers are deficient in pollen, but we experience no difficulty in setting heavy crops, which make surprising progress.

PARNELL'S PEACH ORCHARD.—Mr. Parnell's Georgia peach orchard is said to have cost \$12,000 for the land, and to contain 150,000 trees. We suppose there are few, if any, as large in America.

THE SECKEL PEAR IN ENGLAND.—Mr. William Ingram tells the *Garden* that this variety, so indispensable to an American, "passes away too rapidly, often turning soft before ripening," in England.

WINTER NELIS PEAR IN MASSACHUSETTS.—Fine specimens were exhibited at the meeting of the Massachusetts Horticultural Society, on January 23d, for which a premium was awarded to Andrew McDermott, the exhibitor.

HISTORY OF CLAPP'S FAVORITE PEAR.—At a recent meeting of the Massachusetts Horticultural Society Mr. Wilder said, in reference to the Clapp's Favorite pear, that when it was introduced, the Massachusetts Agricultural Club desired to possess the control of the variety and give it his name, and authorized a committee to offer a thousand dollars for the stock; but Thaddeus Clapp, who raised it, preferred to have it dedicated as it was, and a figure of the pear is carved on his monument in Forest Hills Cemetery.

FRUITING STRAWBERRIES IN FRAMES.—Few private growers are able or willing to devote frame or pit room to the cultivation of early strawberries,

and not many market gardeners have as yet adopted this plan of securing profitable early crops—a matter somewhat surprising, as there is no doubt about the certainty of remunerative prices being thus realized, and that too, at a minimum cost, more especially in the shape of labor. The plan of utilizing the front or side walls of vineries and other houses, for affixing the framework of shallow pits is undoubtedly a good one, as these may either be cheaply heated with a single flow and return pipe, or if narrow and abutting on to forcing houses, no piping is needed to forward early crops. Any other kinds of pit or portable frames, are also available for strawberry culture, and if only the latest of the supplies, or those intermediate between the forced and open-air crops, are secured in frames, the gain in house room and economy in labor is considerable. Those who have good room in their frame ground, and plenty of frames and lights at their disposal might, without much trouble, convert some of their old hot-beds into suitable positions for a few beds of strawberries, and would not regret having done so. The beds, which may be made very shallow, should have a good slope to the south and west, and should be made as solid as possible. After the frames are put on, if these are deep, some manure should be thrown in and trodden down, so as to bring the surface to a uniform height from the glass, and on this about 6 inches of good loamy soil may be placed. This when completed allows head-room to the plants of not less than 10 inches. If pits are employed these may also be similarly prepared, a layer of half-rotten manure well trodden down, and about 6 inches in depth being ample. In every case we should prefer to destroy the old plants and replant every summer, as we find young plants produce the earliest and finest fruit, and besides the old plants are apt to become too crowded to be profitable. For this method of culture we also prefer to lift the plants intended for the frames either from beds where they were allowed to root naturally and remain untouched all the winter and spring, or else from beds into which the young plants were pricked out during the previous summer. In either case we thus procure strong, early, and well-rooted plants, which lift readily and quickly become established in their fruiting quarters. During this week we have lifted, from a narrow border, and sent away sufficient well-rooted plants from last year's runners to plant a pit about 150 feet long and 6 feet wide, and yet have abundance left.

Those who have not a stock of plants thus prepared, I would advise to at once layer the requisite number in 3-inch or 4-inch pots, severing them, and finally planting out before they become much root-bound. A distance of about 15 inches apart each way is ample for any sort, especially seeing that the clusters of fruit must of necessity be supported with wire hoops or stakes and matting well above the foliage, to enable them to ripen properly and quickly. The planting should also be done as firmly as possible, otherwise a superabundance of foliage and not much fruit will be the result. They also require to be kept well supplied with water—should never be allowed to become dry, in fact; while during severe weather they may either be protected with lights, or a mulching of straw litter. In the spring they may be kept somewhat close, forced, if necessary, where there are pipes round the pits, or be allowed to fruit naturally, so as to have them a few days or weeks before those on warm borders are available.—*W. J. M., in Garden.*

SOLID CELERY.—A correspondent of the *London Garden* says:

"The cause of disappointment so often complained of in celery become hollow, is through the seed of worthless kinds being sold under the name of a good variety, which latter can always be had fairly true, if the right sources are gone to; it is usually the low-priced article that turns out disappointing. Anyone who is anxious to make sure of always having some particular sort of celery true, need have no difficulty in doing so when they have once got the sort; if at planting-out time a dozen plants are put in anywhere in an open place at about a foot apart, taking no further notice of them after they have once begun to grow, except just seeing that they do not get smothered with weeds, they will give as much seed in the autumn but one following as will suffice for a good-sized garden for three or four years, in about which time another supply should be provided."

We quote this because we have been under the same impression for many years till recently we have had reason to believe that it is not always the fault of the seed or the kind.

LILIES AS VEGETABLES.—Lily bulbs are among the popular vegetables of Japan, all kinds are eaten—even those for which we have to pay a dollar apiece.

SCRAPS AND QUERIES.

THE THRIPS.—"W. S.," Washington, D. C., a correspondent who has probably had more experience with grapes under glass than any one on

this continent, kindly contributes the following note: "If your readers who are troubled with thrips in their graperies will simply spread a coating of tobacco stems on the floor of the house, they will have no further annoyance, either from thrips or aphidæ."

LICHENS INJURIOUS TO FRUIT TREES.—A New Jersey correspondent says; "Will you please give me the name of the inclosed moss, which I find growing in company with unlimited quantities of lichen on a lot of old cedars on the river bank in front of my cottage. As these trees, knarled and twisted as they are, are very necessary to me, I have amused myself for a week past, scraping the lichen off.

"I know that the lichen is not regarded among botanists as a true parasite but as an epiphyte. But I am satisfied from my own observations the past week, that the lichen is almost as deadly in its embraces as the mistletoe or the fabled Upas tree itself—though possibly longer about it.

"Small limbs, twigs and sometimes the entire tree, if fairly girdled with the lichen, are dead in most cases or dying. The lichen has a strong affinity for moisture and very retentive thereof—trees on the river bank, more or less damp from exhalations from the river, have much lichen upon them—while the same trees (cedars) a hundred yards back have little or none.

"On lifting a piece of lichen from the tree I find the spot beneath invariably damp or even wet and the bark discolored, and generally more or less rotten or doted, penetrating in some cases to the wood. 'Tis, in my opinion, this wetting process that destroys the twig, limb or tree. But whether the lichen does it with 'malice prepense,' as a lawyer would put it, I am not botanist enough to determine.

"Will you please enlighten me on this point, for I am not a little interested in the lichen."

[The old gardeners—whose practice was often better than their reasonings—always insisted on the advantages of scraping lichens from the bark of fruit trees. But modern gardeners teach that if fruit trees are properly cared for they will throw off lichens themselves. In other words, the existence of lichens is a sign of bad health. Scraping the bark or any other thing that "injures or closes the pores," as these good people say, is regarded as an evil. We have, however, seen so much good result from slitting the bark of hide-bound trees,—lime washing those covered by lichen or moss,—and soap cleaning trees that

were even in fair health, that, though our natural tendencies are with scientific progress, we are compelled to admit that the practice is good, and therefore to believe that mosses and lichens may

have, as our correspondent believes, some injurious tendency, quite aside from the general belief that they feed wholly on dead bark or other material. —Ed. G. M.]

FORESTRY.

EDITORIAL NOTES.

TREE GROWTH ON THE PLAINS.—From a recent paper on "Tree Planting on the Plains," by Robert W. Furnas, we extract the following statistics of the growth of trees, as shown by actual measurement of trees of known ages. The measurements were made at the uniform height of two feet above the ground:

Common Name.	Scientific Name.	Years Old.	Circum- ference, (inches).
White Elm.....	Ulmus Americana.....	15	24 $\frac{1}{2}$
Red Elm.....	" fulva.....	24	36
Osage Orange.....	Maclura aurantiaca.....	25	26 $\frac{1}{2}$
Soft Maple.....	Acer dasycarpum.....	18	54 $\frac{1}{2}$
Box Elder.....	Negundo aceroides.....	18	69 $\frac{1}{2}$
Box Elder.....	".....	14	25 $\frac{1}{2}$
Honey Locust.....	Gleditsia triacanthos.....	14	31 $\frac{1}{2}$
Honey Locust.....	".....	22	40 $\frac{1}{2}$
Black ".....	".....	22	41 $\frac{1}{2}$
Black ".....	".....	24	60 $\frac{1}{2}$
Kentucky Coffee Tree.....	Gymnocladus canadensis.....	14	25 $\frac{1}{2}$
Sycamore.....	Platanus occidentalis.....	16	43 $\frac{1}{2}$
Black Walnut.....	Juglans nigra.....	22	48
Black Walnut.....	".....	22	50 $\frac{1}{2}$
White ".....	" cinerea.....	22	48 $\frac{1}{2}$
Shagbark Hickory.....	Carya alba.....	24	30
Chestnut.....	Castanea vesca, var. Am. 14	24	24 $\frac{1}{2}$
Burr Oak.....	Quercus macrocarpa.....	22	36 $\frac{1}{2}$
White ".....	" alba.....	22	29
" Ash.....	Fraxinus Americana.....	22	32 $\frac{1}{2}$
Green ".....	" viridis.....	22	30
Cottonwood.....	Populus monilifera.....	23	78 $\frac{1}{2}$
White Pine.....	".....	23	93
Scotch ".....	Pinus strobus.....	20	36 $\frac{1}{2}$
Scotch ".....	" sylvestris.....	15	23
Austrian Pine.....	" larici, var.....	15	22 $\frac{1}{2}$

—*American Naturalist.*

THE DRYING UP OF RIVERS.—Though the belief that forests increase the rainfall has been given up everywhere, except in Forestry Conventions, there is still a clinging to the belief that they regulate the flow of springs. It would be of great value to hydraulic science if some exact facts and figures could be given—facts collected by men trained in geological observation. Unfortunately, the only "science" that we have in the matter is furnished by "some of the oldest inhabitants" in various places, whose verdant memories tell them that "something has gone wrong since they were boys." It is pitiable to see a government report

on American forestry sent forth with such "facts" and quoted abroad as if it were the work of an intelligent investigation of the facts involved. If we were to take the views of the "oldest inhabitants" on many other questions besides those on forestry, the only wonder would be that the world altogether had not come to an end long ago. Some of the "younger inhabitants" have, however, some tales to tell. Only "six years ago" an "intelligent" observer at Berlin, New Hampshire, had an "unfailing brook that ran three hundred gallons an hour." Now it is "cut short in summer and in winter by drouth." Another specimen is this: "At Richmond, New Hampshire, in 1865, there was water power for four saw mills all the year. Now the water has wholly disappeared."

Now every one conversant with geology knows that these things are liable to occur anywhere, even in countries that never had a tree at all. The writer knows of a tract of country in which every well went dry last year, and numberless springs failed. But it was not referred to the cutting away of forests, but to a huge railroad which cut off all the supplies from the springs. Now nature herself often does just what this railroad did, opens new avenues under ground for the hidden streams, and turns them away in other directions.

It would be very important to ascertain just what influence forests have on our water supplies, but to give in a government document mere street corner gossip as forest science is putting science in a degrading shape.

SPRUCE FIR TIMBER.—I have been talking to-day with a wood agent, who has had considerable experience in dealing with the different kinds of home-grown fir, and his opinion quite bears out what has been said about the usefulness of the spruce. Indeed, to have spoken of the wood in the way he did it almost leads one to the conclusion that "Yorkshireman" can never have seen a really good spruce fir; or if he has, the Scotch fir in his neighborhood must be so extra-

ordinarily good that he cannot appreciate it. At any rate, to condemn the tree as "absolutely worthless" is quite at variance with our experience in the south. I do not advocate the planting of extensive areas with spruce, as the purposes for which it is most useful, would not consume unlimited quantities, unless in some districts there may be a steady local demand for special purposes, such as colliery props. Judiciously planted, however, spruce is not a tree to be despised on estates which suit its growth.—*Y. in Garden.*

THE WESTERN ARBOR VITÆ.—They are still worrying in the Old World about the identity of various trees which they have growing under the names of *Thuja Lobbii*, *T. Menziesii*, *T. plicata*, *T. Standishii*, *T. Craigiana*, and *T. gigantea*, and *Libocedrus decurrens*. Americans have long ago simplified the matter by dropping all the names except those originally given by the first describers. The Western Arbor Vitæ is therefore simply *Thuja gigantea*, and the other in dispute, the Western white cedar—*Libocedrus decurrens*.

The yellow cedar of the Pacific is *Cupressus Nutkænsis*, or, as it is often called, *Thujiopsis borealis*.

CHESTNUT LUMBER.—In some old buildings in Europe chestnut has been found more durable than oak. This is also American experience. Chestnut is one of our most valuable timber trees.

THUJA GIGANTEA.—The Larch having proved an utter failure as a profitable timber tree in England and Scotland, the Arbor Vitæ of the Pacific coast is getting into favor in place of it.

TREE PLANTING IN ARIZONA.—Messrs. Douglas have made an experimental plantation near Trinidad in the Texan Pan Handle. They believe that the absence of trees from these places is as much from the tramping of buffaloes, and from fires, as from any obstacle nature presents, and have bravely undertaken to prove their faith by works. We have no doubt but they will succeed. Most of these dry lands hold water from the winter snows, and when once trees get their deep roots into the moist substratum, why should they not live?

WATER IN TIMBER.—The amount of water present in freshly-cut wood is very different, as is shown by the following table by Scheubler and Hartig: Hornbeam contains 18.6 per cent. of water; Willow, 26 per cent.; Ash, 28.7 per cent.; Birch, 30.8 per cent.; Oak, 34.7 per cent.; Pine, 39.7 per cent.; Red Beech, 39.7 per cent.; Elm, 44.5 per cent.; Larch, 48.6 per cent.; and White Poplar, 50.6 per cent. Wood, when dried at 266° F., at which temperature all the hygroscopic water is expelled, is composed of 50 parts carbon (inclusive of one part of ash) and 50 parts of chemicals.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

SEEDLESS ORANGES.

BY W. C. B.

I recently examined an orange, the seeds of which had all failed to develop. The core was solid, forming no carpels. I have seen oranges in which some of the seeds had not developed, but have never seen or heard of one entirely seedless. Persons who examined this orange had never seen one like it. This seems to have been a rare specimen. *West Philadelphia.*

[The question of seedless fruits is a very interesting one. The persimmon, grape, apple, pear and other fruits often have individual trees that bear seedless fruit. This they continue to do

year after year, and grafts taken from them will perpetuate indefinitely the seedless variety. Now as a general rule we know that if the flowers of any of these plants do not get pollen for their stigmas, they do not fruit at all. It is to be presumed, therefore, that these seedless varieties really get pollen, or they would not develop fruit. If we assume this to be a fact, then we have the curious conclusion that some pollen is capable of producing the fruit, but not capable of inducing seed.

It is however by no means certain that it always requires pollen to produce seed vessels without seed, for that is what seedless fruits practically are. The Osage orange, and some kinds of ash, and maple, will perfect empty seed vessels when wholly free from pollen influence.—Ed. G. M.]

THE GARDEN WEB-WORM—EURYCREON RANTALIS, GUEN.

Order Lepidoptera; Family Pyralidae.

BY PROF. C. V. RILEY.

Perhaps the most marked insect outbreak of the year has been the appearance of *Eurycreon rantalis* over a large area in the five States of Texas, Missouri, Kansas, Nebraska, and Arkansas, and also in the Indian Territory. It has attracted a great deal of attention, and the damage done has been very great. The principal crop to suffer was corn, and a replanting was necessitated in many instances. The general corn crop for the year, as statistics show, has been larger than ever before, the acreage having been widely extended; but the yield per acre in the States named was reduced, owing, largely, to the operations of this insect.

Eurycreon rantalis is quite a wide-spread species, occurring all over the United States. It has been captured in South America, and the original

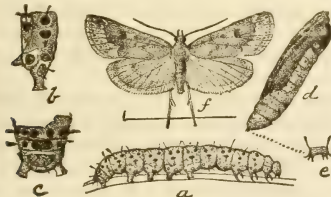


Plate VI, Fig. 3.

description of the species was from a specimen from Montevideo. It is also a very variable species, and has been variously described under the names of *crinialis* by Walker,* of *communis* by Grote,† and of *occidentalis* by Packard.‡ It is referred to the genus *Nymphula* by Guennée, and *Scopula* by Walker, but properly belongs to Lederer's more restricted genus *Eurycreon*.

The moth (Plate VI, Fig. 3) has an average expanse of 18^{mm}. The general color is either orange or reddish yellow inclining to buff, or more commonly a lighter or darker shade of gray, having, in certain lights, either a copperish or greenish reflection very similar to that on the well-known cotton worm moth (*Aletia xylin*). The characteristic markings, as shown in the figure, are the darker reniform and orbicular spots with a paler shade between them; two irregular transverse

pale lines, generally relieved by darker shade, most intense posteriorly on the anterior line and basally or interiorly on the posterior line. The terminal space may be either paler or darker than the ground color. The markings are very variable, however, dark specimens (*rantal*) having them all well defined, paler specimens (*communis*) less so, while in others (*crinialis* [*crinitalis*, Led.]) the anterior line and inner portion of posterior line may be lacking. *Dasconalis*, Walker, is probably but a dark specimen and should be added to the synonymy.

The larva, which seems to have been unknown prior to 1873, when we made manuscript notes and descriptions of it, is also somewhat variable in color, being either pale or dark yellow or even greenish-yellow. It is marked with rather distinct jet-black piliferous spots, as illustrated in the figure. In the better marked specimens there is a quite distinct pale double line along the middle of the back and a single one at the lower side. The piliferous spots are also more or less distinctly relieved by a pale border.

The pupa (Pl. VI, Fig. 3 *d*) is of the normal brown color and characterized by the tip of the body having two prominences, each furnished with three stout short spines.

FORMER INJURIES.

This species has not before been prominently treated of as a wide-spread injurious insect, though it has done a certain amount of damage in times past. In 1873, we observed it feeding in great numbers for miles along the Neosho Valley, in southeastern Kansas, skeletonizing the leaves of *Helianthus*, *Ambrosia*, *Amaranthus*, beets, potatoes, and other garden plants.

In June and July, 1880, it again appeared in injurious numbers in parts of Kansas, and Prof. F. H. Snow wrote a short account of it for the issue of the *Lawrence* (Kansas) *Daily Journal*, of July 28th, 1880 (reprinted in "Psyche," III, p. 127), in which he gave a short description of the larva, and stated that it fed on sweet potato, alfalfa, beets, peas, Pig-weed (*Amarantus*), and Purslane (*Portulaca*).

After its occurrence in 1880, Prof. E. A. Popenoe, of the Kansas State University, published an article in the Second Quarterly Report for 1880 of the Kansas State Board of Agriculture, which gives the best published account of the insect up to that time, and in which the larva, pupa, and imago are described with sufficient care to obviate further detailed description here. The cremastral characters of the pupa (Pl. VI, Fig. 3, *e*) which we

* List of Lep. Ins in Brit. Mus., part xviii, Pyralides, p. 798 (1859).

† "Canadian Entomologist," vol. viii, p. 99, May, 1876.

‡ Ann. Lyc. Nat. Hist., 1873, p. 261.

have indicated, are characteristic, and any fuller description of the larva should be comparative, and especially with other allied larvæ like that of *Botrys marculenta*, G. and R., which very closely resembles it.

June 27th, 1881, we received two larvæ of *rantalalis* from Mr. W. C. Lang, of Malden, Mo., with the statement that the species did great damage to cotton, and the same month it was received from Lamar, Mo., as damaging corn and garden crops.

One of our correspondents, Mr. W. G. Robinson, of Rosston, Cook County, Texas, more observant than others, has noticed the same worm for the last ten years in his county, where he states that it appears yearly to a limited extent, feeding principally on the "Kerless" weed (*Amarantus*), but that 1885 was the first season in which he had known it to do any damage to the cotton crop.

LOCALITIES OF DAMAGE IN 1885.

The first report of damage done by this insect the present year was received June 22d, from J. M. Altoffen, of Independence, Montgomery county, Kansas, and from that time until late in July we were in constant receipt of letters concerning it. Specimens were received from the following localities: Texas: Cook, Erath, Denton and Hopkins Counties; Arkansas: Crawford County; Missouri: Jasper and Vernon Counties; Indian Territory: Colbert and Econtuchka, Seminole Nation, and Vinita, Cherokee Nation; Nebraska: Lancaster County; Kansas: Cowley, Montgomery, Coffey, Labette, Cherokee, Crawford, and Neosho Counties. Prof. F. H. Snow, in the report of the Kansas State Board of Agriculture for the month ending June 30th, 1885, states that no less than thirty-five counties reported more or less damage from this insect. Those reporting the heaviest damage were all situated in the southeastern quarter of the State, and were, excluding the seven already mentioned, Allen, Bourbon, Chautauqua, Elk, Greenwood, Harper, Harvey, McPherson, Reno, Sedgwick, Sumner, Wilson and Woodson, thirteen in all. The remaining fifteen, which reported slight damage, were Anderson, Barber, Butler, Chase, Ellis, Finney, Ford, Lyon, Marion, Pawnee, Pratt, Rice, Saline, Stafford and Wyandotte.

FOOD-PLANTS.

There is no question but that the preferred food of this species is the foliage of plants of the genus *Amarantus*, called in different parts of the country *Amaranth*, *Pig-weed* and *Careless weed* (corrupted into "Kerless weed" or "Karless weed"). This was very noticeable in our observations of 1873,

and its next preference seemed to be Purslane. Professor Snow also mentions Lamb's Quarter (also called "Pig-weed" *Chenopodium*), as a favorite food-plant. Prof. C. E. Bessey, writing from Lincoln, Nebr., August 11th, mentioned an unusual abundance of these larvæ upon *Amarantus retroflexus* and *A. blitoides*. Another correspondent mentions finding them the present year upon the common Cocklebur (*Xanthium strumarium*), but this was probably due to their excessive abundance and want of proper food. This also is probably the case with the common Burdock (*Rumex*), which is mentioned by another correspondent. Professor Popenoe (loc. cit.) mentions, among the weeds injured, *Amarantus alba*, *Chenopodium album*, *Ambrosia trifida*, *Apocynum cannabinum*, and *Grindelia squarrosa*. He also mentions the fact that they injured a bed of scarlet verbenas.

The cultivated plants injured during the year, according to our own correspondents, are as follows: Corn, cotton, cabbage, cucumber, melon, squash, pumpkin, sweet potato, Irish potato, egg plant, tomato, beets, bean, pea, red clover, alsike, alfalfa, orchard-grass, timothy, meadow oat grass, millet, and apple-tree leaves.

Thus it appears to be able to feed on almost any plant commonly grown in truck gardens, and upon a variety of forage plants. No one has mentioned, in fact, any plant upon which it will not feed. Professor Snow, in the article just cited, gives the following food-plants additional to the above: Flax, tobacco, sugar-cane, castor beans, lettuce, and onions.

The species has been very generally referred to as the "Web-worm," but as this is a very comprehensive term, we have called it the "Garden Web-worm," as a means of distinguishing it from the many other Web-worms, most of which, however, occur on shrubs and trees.

HABITS AND NATURAL HISTORY.

The full natural history of the species has not yet been made out. The eggs have not been described, the method of hibernation is not positively known, and the number of annual generations has not been carefully determined. Some of these gaps we would have endeavored to fill up the present year but that we were much away from the office.

Number of Annual Generations.—From our own observations and from what we have been able to learn from our correspondents, the first brood of moths is noticed from May 1st to May 7th in Texas, from May 20th to May 25th in Mis-

souri, and from May 20th to June 6th in Kansas. If, as is altogether likely, the insect hibernates as a moth, then this May brood may be considered as a second brood of moths, and as the adult offspring of the hibernating individuals. The larvæ of the May brood of moths are noticeable (*i. e.*, full grown in numbers) from May 25th to June 1st in Texas, from June 10th to June 18th in Missouri, and from June 7th to June 15th in Kansas. Another brood of moths (the adults of the destructive brood of worms) was noticed June 25th in Texas, July 10th in Missouri, and July 1st in Kansas. The offspring of this last (third) brood of moths were nowhere noticed as injurious.

The worms were reported in small numbers July 15th from Kansas. August 11th full-grown larvæ were received from Nebraska, from which State they had not before been reported, and it is possible that these individuals were the offspring of a fourth brood of moths. More probably, however, circumstances being apparently less favorable to their rapid increase, they were the retarded third brood of worms.

The statements which we have just made have only a general bearing, and the same confusion of generations was noticed, in all localities where the insect occurred abundantly, which is always noticeable in the undue development of any species. Larvæ of all sizes were working together in Texas, and what we take to be the third brood of moths was flying before many of the second brood of larvæ had ceased to work. From the facts at hand it may be safely concluded that there are normally four or five annual generations, and possibly one or two more under favoring circumstances. Dr. J. J. Kackley, of Chetopah, in writing to Professor Snow, says: " * * * But few of the webs contain more than one inhabitant. I, therefore, do not think they are gregarious in their habits, but the force of numbers drives them to limited space. The wheat and oats appear to be exempt from their ravages, and this may be accounted for in consequence of the blades at this time being well lifted from the ground, as they are rarely found feeding upon the leaves of plants more than 12 or 15 inches from the root. When the top of the corn-plant is above this height the central portion escapes, and the worms confine their mischief to the lower blades of the stalks. These lose their green luster and wither, remaining sickly and pale; but at the same time the head is pushing forward in vigorous growth, and does not succumb to death like the younger plants of smaller stature. * * *"

Professor Popenoe gives the following account in the 1880 article already cited:

"The following points in its history are the partial result of my study of this insect. Although I made careful search for the egg, I failed to discover it in situ, but it is without doubt deposited on the lower side of a leaf, or low down among the bases of a cluster of leaves, as newly-hatched larvæ are found in both these situations, from which they soon wander to other parts of the plant. As soon as it [the larva] begins to move about, it begins to spin the web, and this is increased in extent as the movements of the larva are extended. It is very active in all stages of growth as a larva, and springs aside quickly when touched, sometimes throwing itself into a coil, but more often running rapidly away. At least in early life, the larva, when thrown off a leaf, will hang by a thread of silk. In case a single leaf is of sufficient size, as in the sweet potato, the well-grown larva is generally found on the upper side, in a shelter formed by drawing partly together the edge of the leaf by the silk of its web. In this shelter it is usually found at rest during the day, hanging by its feet, back downward, to the lower surface of the web. In other plants, several leaves may be drawn together for a place of concealment. If, indeed, the larvæ are not partially gregarious, they are at least not disturbed by proximity to each other, as several may be found, at times, in a common web, although I believe this is exceptional. As they are forced to move to new parts of the plant for fresh food, their webs are extended, until finally the entire plant is covered. The young larvæ devour only the surface and substance of the leaf on the side where they are, leaving the veins and the opposite epidermis untouched, producing a 'skeleton' leaf. As they grow older, however, they devour all portions of the leaf, and often eat also the petioles and tender stems. Opportunity has not been given to determine the exact length of the larval life of this insect, but judging from observations made, this cannot greatly exceed a week. Parties living in the region where the insect was present in great numbers give ten days as the length of the time in which the chief destruction was accomplished."

On attaining its full growth the worm spins up, amid the debris on the ground at the base of the plant, in a delicate brownish cocoon of irregular shape, and transforms to pupa, in which state it remains from one to two weeks.

[The above is an abstract of the Report of the Entomologist of the Department of Agriculture, Prof. C. V. Riley, concerning an insect that promises to be very troublesome to gardeners, and we give it that our readers may be on the lookout for it. It is destroyed by Paris green and London purple. We cannot keep back these insects when they insist on coming among us. But we can watch for their early presence and destroy them

before they do much damage, when we know what to look for. It is in work of this kind that the labor of the Entomological Division of the Department of Agriculture has proved itself of so much public utility, and has become so popular with the people.—Ed. G. M.]

EDITORIAL NOTES.

THE GRAPE IN AMERICA.—As there is just now some interest manifested in the history of the grape on this continent, it may be well to note, that they were found very abundant on the coast of what is now Massachusetts, in the year 1001, when the coast was discovered by Erickson, and his thirty-six companions from Norway; and it was on account of the abundance of grapes there, that what is now America was named by them Vineland. They also noted the existence there of the reed or Wild rice, *Zizania aquatica*.

HISTORY OF THE POTATO ROT.—Prof. Spalding of Ann Arbor says that the potato rot appeared in this country as well as in Western Europe in 1842, and 1845. He adopts the name of *Phytophthora infestans* for the fungus which causes it. No wonder it is not so virulent in modern times, loaded down with such a cognomen. When it was so very severe, the fungus men gave it a much lighter one. Prof. Edwin F. Smith finds continuous rains favorable to its development.

THE BOTANY OF INDIA.—To the botanist, India yields, as the reward of plant-collecting toil, specimens varying from such as flourish near the equator to those which thrive near the line of everlasting snow, illustrating the chief natural families of all parts of the world. Yet it has few distinctive features of its own.

Nothing can be more wretchedly plain in appearance than the treeless, shrubless, shelterless plains in the northern province of the Madras Presidency, or in parts of the Deccan. In Western India, and even in the southern slopes of the western Himalayas, there are low ranges of hills, denuded of vegetation, which have all the barrenness of Arabian or African deserts; yet, other portions of this wonderful country are of such fertility as to yield even two or three harvests annually.

The vegetation of India being so varied, we will first consider that of the Himalayas, second that of the great plains of the Ganges, etc., and lastly that of the Deccan.

The European flora, which is diffused from the Mediterranean along the high lands of Asia, extends to the Himalayas. Many species reach the central parts of the chain, though but few are found at its eastern end. From the opposite quarter there has been an influx of Japanese and Chinese forms, such as the rhododendrons, the tea plant, and others, numerous in the east, and gradually disappearing in the West.

At the greater elevations, the species which are identical with those of Europe become more frequent, and in the Alpine regions many plants are found which grow in the Arctic Zone. In Thibet, a Siberian type is established, some forms of which are also found in the plains of Upper India. Juniper and poplar are the only trees seen, except fruit trees, which include apricots, pears and apples, growing up the mountain sides to 11,000 feet, and grapes to 9,000 feet.

The shrubby plants include small forms of willow, elm, honeysuckle and rose. Mosses and ferns are very rare, but many European grasses and sedges are found in the pastures.

In the moist regions of the east, the Himalayas are almost everywhere covered with a dense forest which reaches up to 12,000 or 13,000 feet. Many tropical types here ascend to 7,000 feet or more. To the west, the upper limit of forests and tropical plants is from 1,000 to 2,000 feet lower.

In Sikim, directly north of Calcutta, dense forests of tall trees have a luxuriant growth of under shrubs and are adorned with climbing plants in wonderful profusion.

In the tropical parts large figs abound, with the sal, so valuable for its timber, laurels, bamboos, and several palms, and climbing over the largest of these, species of *calamus* are found. This is the western limit of the nutmeg. Plantains ascend to 7,000 feet, and pandanus and tree-ferns abound. Other ferns, orchids, and climbing plants are very numerous, with their varieties of splendid foliage.

Various oaks are found within a few hundred feet of the sea level, but are more abundant higher, becoming very frequent at 4,000 feet.

At this elevation magnolias, cherries, apples, maples, alders, birches, etc., also appear. At 6,000 feet the rhododendrons begin, become abundant at 8,000 feet, and from 10,000 feet to 14,000 feet form in many places the mass of the shrubby vegetation which extends above the forests.

Of these wonderful plants, the most superb is a tree from 30 to 50 feet high, having leaves 18 or 19 inches long, and only at the extremities of the

branches. One species has beautiful flowers $4\frac{1}{2}$ inches long, and as broad, in dense clusters; some have white flowers; some are epiphytes, growing upon magnolias, laurels and oaks, and bearing from three to six white, lemon-scented bells $4\frac{1}{2}$ inches long at the end of each branch. Others, with small flowers, are trailing shrubs; but the largest is a timber tree, from 50 to 70 feet in height, covered with a blaze of crimson flowers. Some species are narcotic; the buds of others produce an oil much used for rheumatism; some are poisonous, even the burning of the wood as fuel causing inflammation of the face and eyes; while the flowers of others are used as food by the natives, and the Europeans make them into a jelly.

Passing westward along the mountains, we find the trees of the hotter and drier parts of Southern India. Ferns are rare, the tree ferns have disappeared, and but two or three species of palm, with as many of bamboo, are found.

The outer ranges are mainly covered with immense tracts of pine, rhododendron, oaks, and, in some places, cypress. The shrubs comprise *rosa*, *rubus*, *indigofera*, *viburnum*, *clematis*, etc. Of herbaceous plants, species of *ranunculus*, *potentilla*, *geranium*, *thalictrum*, *primula*, *gentiana*, and many other European forms are common.

On the northern slopes and in sheltered valleys, are the denser forests of alder, birch, ash, elm, maple, etc., and still higher the common walnut, horse-chestnut, yew, and several junipers.

Cultivation hardly extends above 7,000 feet, except in the valleys behind the great snowy peaks, where a few fields of buckwheat and barley are sown up to 11,000 or 12,000 feet.

Lower, rice, maize and millets are common; also wheat and barley, with buckwheat and amaranth, whose seeds are gathered as corn crops on poor lands recently reclaimed from forest. Most of the ordinary vegetables of the plains are raised, and potatoes in the neighborhood of all the English stations.

In Kashmir, the plane and Lombardy poplar flourish though hardly seen further east; the cherry is cultivated in orchards, and the vegetation is decidedly European.

One species of coffee is found in this range, but its cultivation is very limited. Tea, however, is more successful both in the east and west of the mountains, and cinchona has been naturalized in the Sikim Mountains.

The total number of flowering plants inhabiting the Himalayas amounts to 5,000 or 6,000 species.

—*The Student.*

FROGS IN ROCKS.—In the recently issued Proceedings of the Berwickshire (England) Naturalists' Club, Commander Francis Martin Norman, the president of the body, goes over the ground often investigated, as to whether frogs and toads can be imbedded in rocks and thus live for ages. Popular opinion in England has no doubt of it. Scores, perhaps hundreds are found, who will testify that they have seen the creature hop out alive after the solid rock has been broken; but scientific people protest against any one believing in such absurdity. Every living thing, they contend, must have something in the way of food to produce animal heat, and must have oxygen before the food can be rendered available. Granting that some creatures can live long on little, we cannot believe that any can live for ages on none. That these creatures are found in suspicious situations seems to be conceded; but the remark of science is, that water with animalculæ has probably found its way into a crevice, and, if water, of course, air also. Commander Norman does not believe that they would live long wholly without food and air, and repeatedly desired to see a case, should one be discovered. Fortune favored him. He was told one had been seen. He saw the frog two days after it had been taken from the rock. It was in no ways different from any modern frog, except apparently overgrown and feeble in its motions. Though liberally supplied with food, it died in a few weeks after liberation. About half the section of the frog's prison house was saved, and this is figured in the Proceedings. The other section was not saved by the quarrymen, and could not be found. There was abundant evidence, and no question that the frog came from that cavity. The cavity was six feet from the surface of the rock bed; on this rock was eight feet of shale, and on the shale a sloping bank of ten to twelve feet of earth. The frog was thus some twenty-four feet beneath the surface. In this bed of limestone there were slight cracks running down through it, every few feet apart, but no crack seemed to connect with the frog's home in the section saved. There may have been in the missing section. This want of all the facts makes the matter quite provoking to the Commander. He cannot admit that a frog would live long under circumstances such as the facts so far indicate; he prefers, therefore, to believe that, if all were known, some fact, though now seemingly improbable, would show that air and food were accessible. Buckland's attempts to settle the question are often referred to. His toads, in her-

metically sealed vessels, did not live a year. With air, but without food, they died within two years. But, as Commander Norman remarks, the equally careful work of Mr. Jesse, "the well-known naturalist," is seldom referred to. In a flower-pot, covered by glass, so that "apparently" no insect could penetrate, and the pot sunk in the ground beneath the reach of frost, they were alive at the end of twenty years. Air and water could undoubtedly get in, and minute organisms both in the air and water follow, and the creatures may have been enabled to exist on them. The actual facts recorded under Mr. Norman's own observations do, however, show that the popular belief has good ground to stand on.—*Independent*.

SCRAPS AND QUERIES.

HOST PLANTS OF THE MISTLETOE.—As noted last year, it is evident that the mistletoe, while preferring to grow on some plants in one locality or in one age, seems to shun them in other places or other times. Hence, it is of great service to knowledge, if friends will send from time to time, the names of the trees on which, in different localities, the mistletoe loves to grow. Some have already kindly done so; but there are many other places yet to hear from.

A lady in South Carolina now writes that in upper Georgia she has seen it grow very abundantly and luxuriantly on the chestnut. This is the first time this tree has been named as a host plant for the mistletoe. It grows there on the oak; but species not named. Another interesting fact is, that "near Augusta, Georgia, on the borders of a lagoon about three miles from the city," she found it on a Black walnut. In the same place, she met "a large cluster in fruit on a species of *Ilex* (Holly), its white translucent berries showing in charming contrast with the scarlet berries and glossy green foliage of its holly host."

BUD VARIATIONS.—"E. L. E., Omaha, Nebraska, writes: "Will you please give some information in next issue of GARDENERS' MONTHLY, in regard to sports? Do they proceed from stem or radicle, or both? Do fruit trees ever produce them? Can they be accounted for upon any scientific principle?"

[This did not reach the Editor till the 19th. Communications for notice in our "next issue," should be received before the 5th of each month.

Bud variations, as "sports" are termed in vegetable biology, usually come from any part of the stems or branches. There is no reason why they

may not come from the root, though we do not recall at this moment an instance. It is, however, remarkable that many variegated plants, which have originated as sports, and which perpetuate the "sport" by cuttings of the stems, lose the variegation when propagated from root cuttings. This is, however, by no means the rule, as *Pyrus japonica variegata* comes true from root cuttings. It was at one time believed that even variations from seed might not come true from root cuttings; but double bouvardias perpetuate themselves very well in this way. Sports among fruits are very common, though fruit-growers have not recognized the fact to the extent that florists have, and thus attempted to propagate the sport by grafting. It is quite frequent to read of Russet apples coming on trees of smooth-skinned kinds, or the reverse; of sweet apples appearing on sour apple trees; of long apples, or round apples where normally we should find the reverse; and the nectarine, as is well known, originated as a sport from the branch of a peach.

The underlying principle that produces variation, either in the shape of "sports," or from seed, has never been revealed by any scientific man; and the study offers a rich field for some one. We can see a very good reason why variation should be a governing principle in nature. In the absence of variation, just imagine how impossible existence would be! If every child were the exact image of its parent; if every human being were the exact counterpart of every other human being, we could not tell one from the other.

No further illustration is needed to show that variation is an essential principle in the fore-ordination of nature. Even the acute Darwin could get no further than to assume that variation was a law of nature; and his theories of evolution have been built on this assumption. But no one has the slightest idea of the underlying principle of the thing. True, Mr. Darwin thought that "domestication," "climate," "environment," and other indefinite ideas covered by these terms, had an influence in determining changes in organic things; but we think we are not mistaken in saying, that with the progress of knowledge since Mr. Darwin's time, the best students place very little value on these circumstances as essential factors in change. They prefer to say that really nothing is known of the principles governing change. Variation being evidently a necessity to existence, changes would go right on, and did go on, long before "domestication" entered the world; long before man made his appearance here.—Ed. G. M.]

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

TRAVELLING IN AUSTRALIA—THE FATE OF DR. LEICHARDT.

BY W. T. HARDING.

Please see page 157, Vol. xxiii, 1881, of the *GARDENERS' MONTHLY*, in which an account is given of at last discovering the (supposed) remains of Dr. Leichardt, the distinguished explorer and botanist, who, in 1848, was last heard from, when trying to force his way to the Cougoon, through the unexplored wilds of Australia.

From recent advices from Cloncurry, in Queensland, which I enclose, we are led to infer that the "bleaching bones," previously mentioned as having been discovered in the "bush," were not those of the once noble, and intrepid, though unassuming, young German savant. Wherever the science of Botany is recognized, and floral beauty finds admirers, and the love of adventure meets encouragement, is the name of poor Leichardt favorably spoken of, more especially since his unaccountable disappearance.

Among my once numerous friends and acquaintances in Australia, the most anxious and painful suspense imaginable was manifested about him. His indomitable perseverance, true generosity, probity and active goodness, endeared him to all. Tears would dim the eyes of those who loved him, at the mere mention of his name, and his memory will be ever held sacred.

With but few exceptions, nearly all I conversed with about their unfortunate friend seemed to think he had either perished for want of water, or had been killed and eaten by the wretched baboon-like savages, who, in somewhat numerous groups skulked and prowled about the immense quantities of beautiful waving ferns that mingled with dense growths of splendid flowering shrubs and luxuriant herbaceous plants, so common to those parts. In such like leafy tangles, where the discomforts and perils which at times beset the bewildered traveller in the pathless and almost impenetrable scrub or low jungle—low, though much taller than himself—where no friendly compass is at hand to point the way, nor tree large enough to climb to take a bearing from, how greatly perplexed and embarrassed he soon becomes, in his endeavors to find a way out, the

writer of this well knows from his own Australian experience.

A friend, whom no one knows as well as the writer, during the time he spent in Australia, has vivid memories of the fearful time he once passed when trying to get through such a rank mass of vegetation. It was wonderfully woven together with Kennedias and Sollyas, which he unwittingly got entangled in when thinking to save several miles in a long journey from the far interior to Sydney, N. S. W. With hopes of considerably shortening the distance, he unfortunately ventured to cross a treeless scrub; and, as the sequel will show, he had reasons to thank God he ever got out again. Weary and footsore with walking so many days, he soon discovered he had made a mistake, as it did not prove the "short cut across" he expected. After considerable floundering about for several hours until nightfall, through every kind of obstruction possible to find in such a place, he began to feel still more fatigued, and somewhat alarmed at the thought of being lost. So, with as much determination as he could muster, he still continued to struggle on, without knowing which way he was wandering; until at last, through excessive fatigue and sheer exhaustion, he sank down in utter despair among the close herbaceous growth and thick green bushes that obstructed his vision. Completely prostrated as he was physically, there was not, however, any rest for him there. He was almost worried to death with the millions of large, fierce, biting, stinging ants, which swarmed over everything, himself included; and which, in defence of his life, he was compelled to keep fighting until the bright sun arose in the morning.

Half frenzied with pain; stupid and feverish from loss of sleep; the sight of the beaming bush-traveller's guide seemed to give him fresh hopes and vigor again. As soon as the cardinal points could be made out he renewed the attempt to extricate himself; and, but a short distance from where the miserable night was passed, he fortunately discovered a clump of *Charlwoodia congesta*, with stems sufficiently stout to mount high enough to get a view of the park-like, open forest before him, and which at about midday he reached.

Had the person alluded to not been able to get

out of the frightfully confounding, distracting bush-maze he seemed so hopelessly entangled in, of course he would have perished there. And such may, possibly, have been the unhappy end of the lamented Dr. Leichardt. *Mt. Holly, N. J.*

[It is more than likely that the nervous shock which one feels when the first idea of being lost comes over him, has often much to do with the determination of his fate. It requires much nerve to retain presence of mind under these circumstances. The writer has had a number of these experiences, and can testify that it is the easiest thing in the world to feel "lost" and then come near realizing it.

One unpleasant experience was on a mountain top, which was the headquarters for his party for a few days. Desiring to find a species of lily, of which one of the others had found but a solitary specimen, he undertook to make a day alone in a wholly new direction. He carefully noted the trees and landmarks through the forest on his descent, making some artificial points where necessary. Nothing could be easier than to note these on the return. About noon he had reached a descent of perhaps 2,000 feet, when he was enveloped in a thick fog, which, with the deep shade of the firs and spruces, made it almost like night. When once you obtain the knowledge that you have lost the points of the compass, the feeling of utter helplessness is indescribable. It might seem that all one has to do after going down hill is to go up again. But a mountain side is not like an ordinary hill—there are little ups and downs, small plateaus, gullies to cross, and other incidents which soon make one uncertain whether he is going up the same hill he came down. In the fog emergency referred to, it was necessary to stop and think. He remembered that near the top of the mountain he had passed a strong spring, which was on his left hand. This spring ought to develop to a fair stream, and must run down hill. The plan was to be sure that stream was on the left, and with the greatest care to avoid turning and getting the left on the right, to strike the stream, and then follow its course up hill. This was done—but even when it was struck there was the uncertainty that it might be another that had taken its rise somewhere since the other had been passed. But on this occasion it proved correct. By nightfall the top of the mountain was reached. The lesson it taught was, that in these emergencies everything is suspected, and the general uncertainty is what unnerves one.—Ed. G. M.]

EDITORIAL NOTES.

LADIES AS MEMBERS OF LEARNED SOCIETIES.

—At a recent meeting of the Massachusetts Horticultural Society, Mr. Wilder said that we are very much indebted to ladies for the improvement in the cultivation of flowers. He spoke of the time, very early in the history of this society, when it was proposed to elect Mrs. Governor Gore and Mrs. Griffith, of New Jersey, honorary members, but some thought the proposition of doubtful expediency, because a woman made trouble in Eden.

The trouble in Eden came from the laudable—though in that case, perhaps, mistaken endeavor to get the best everytime,—while her meeker husband was satisfied to go jog-trotting along. It is true she forgot the commandment,—but there is no proof that her easily satisfied, and mean, blame-on-her, worse-half, ever had sense enough to think of the commandment, or anything else. We always had an admiration for Eve, in spite of the failure of this, the first great effort at improvement in fruits, which she so daringly attempted.

It is surprising to find intelligent societies boggling over the admission of women. Some twenty years ago the Academy of Natural Sciences of Philadelphia, broke through old traditions, and elected Miss Grace Anna Lewis, the well-known Ornithologist, and other ladies, to full membership in the body. The downfall of the institution was predicted, and a number of esteemed gentlemen resigned their membership. Ladies are now frequently elected and no one thinks anything strange of it. The institution is quite as prosperous as it ever was. In spite of this experience other bodies, even in progressive Philadelphia, still halt. Some two years ago, a lady with an admirable scientific training,—indeed we might say eminent in science, was unanimously elected a member. The same lady was recently presented for membership in the American Philosophical Society—a society founded by the liberty-loving Benjamin Franklin, and the woman-horror was so great that there were 15 against to 14 for her admission. Quite recently, at a meeting of the Linnæan Society of London, a lady was discovered in the visitors' gallery, where she had been invited by a member. The old fossils were thunderstruck, and on motion of a member further proceedings were suspended until the invitation to the lady to leave the premises, had been carried into effect. The world does move, but very slowly in some quarters.

WESTERN NAMES FOR WESTERN WEEDS.—

Some new common names of plants, appearing to have become common in the West, as noted by the annual report of the Ohio Agricultural Station, are worth recording here: Cursed Thistle—*Cirsium arvense*; Wheat Thief, also Pigeon Weed—*Lithospermum arvense*; Bird's Nest—*Daucus carota*; Yellow Daisy—*Rudbeckia hirta*; Sandbrier—*Solanum Caroliniana*; Carpet Weed—*Molugo verticillata*; Butter Print, Pie Print, Velvet Leaf—*Abutilon Avicennæ*.

LATIN NAMES FOR GARDEN VARIETIES.—We have from time to time entered our protest against the ridiculous habit of giving latin names to garden varieties. But our English friends would not fall in line. They even refused to receive ours with good English names, but baptized them over again. We gave them Tom Thumb, and George Peabody Arbor Vitæ, but they couldn't think of admitting them into their collections with these substantial cognomens; they are something with wonderfully long Latin names over there. But they are now getting about sick themselves. The *Gardeners' Chronicle* says of a fern recently on exhibition before the Royal Horticultural Society:

"A pretty garden variety of *Pteris cretica* was shown at the last meeting with so formidable an array of Latin adjectives attached to it as would necessitate at least two ordinary labels for its display. The committee decided, wisely as we think, simply to call it *Pteris cretica* 'H. B. May,' and awarded it a certificate under that name. If Mr. May prefers his Latin vocabulary there is, of course, nothing to prevent him from calling his plant what he pleases, but we venture to think the general convenience will be consulted if the variety be henceforth known under the name by which it was certificated, or as 'May's variety.' In any case it is a pretty plant, well suited for decorative purposes, and is described in another column."

HISTORY OF THE ORANGE IN CALIFORNIA.—

Orange trees were first planted in California about 1820, by Franciscan friars, at the old San Gabriel Mission in Los Angeles county. Many of these old trees still bear excellent fruit. San Gabriel is now the chief orange centre of California, having probably half the bearing trees in the State.

AN EARLY AMERICAN BOTANIC GARDEN.—

The minutes of the American Philosophical Society, June 19th, 1784, record that a botanic garden should be at once established, that "200 feet of the Arch Street lot next the Observatory," should be at once prepared for planting, and "Hopkinson and Rittenhouse" were appointed a committee "to look out for a gardener." The

"Observatory" at that time was where the grand public buildings in Philadelphia now stand.

PROF. C. V. RILEY.—It has been a marvel to most reflecting people how Prof. Riley gets through with so much original and very useful work. But we are sorry to learn that it has its severe price in broken-health, while there is so much new around him he must investigate and learn. The only course left is to order him away from the tasks he loves. He will leave on the 1st of June for Europe. We fear, however, there will be found something new under the sun, even in the Old World; and we can only hope men of science there who will naturally seek to honor him, will not place anything in the way of his speedy return to us here.

JOHN BROOKS.—Mr. John Brooks, of whose death at Pittsburgh on the 6th of March, we have but just heard, was well known about Philadelphia a quarter of a century ago for his remarkable skill in growing the hot-house grape. When the present Senator Cameron built the fine ranges of glass on the family estate at Lochiel, at Harrisburg, Mr. Brooks was the first gardener to take charge of them, remaining in that situation about two years. Since that time he has resided in Pittsburgh. Mr. Brooks was a native of England, though many years a resident in this country.

SMALL FRUITS.—By Wm. H. Hills. Boston: Cupples, Upham & Co., Agricultural publishers. 1886.

This is a large octavo of 137 pages, and, though we have seemingly enough works on this subject, this is really one of the most original and interesting books of the class that has come before us for some time. The author is of the combative kind, and strikes out right and left in a manner truly refreshing. The reader becomes imbued with the same spirit, and, as there are innumerable "chinks" in the author's armor, the combative reader can enjoy the rare opportunity of thrusting in his lance as he goes along, feeling that the author ought to enjoy the fun of the thing as well as himself. Sometimes the free lance of the author does not do injustice to himself. In his preface he states that he does not attempt more than to aid those "who may wish to cultivate fruits for their own tables, with their own hands;" but it is really a work by which the market grower may profit quite as well. He tells us that it is no importance to us in this year, Anno Domini 1886, to know whether Pliny, Virgil or Ovid knew anything about strawberries—a common protest with those who decry classical history—but surely the same argu-

ment might be used against the information as to what Michael Keen did in 1806, of which he tells us. He has a sharp thrust at some one who recommends to those who want to get something very extra in the strawberry line, to put on manure "three inches deep and then fork in," protesting that it would cost between two or three thousand dollars per acre. But if we are writing for the amateur gardener we have nothing to do with the broad acres, and surely some splendid results have been had by just such a dressing of manure. He insists that on all wet lands underdraining of some kind "must be," while it is certain sure that throwing the earth up into ridges and making surface conduits will do just as well, and cost very much less. Some nurserymen advertise that when customers send orders for special varieties, they should at the same time send word whether the nurseryman is at liberty to substitute others in case the stock has run out of some kinds particularly desired. Every nurseryman knows that in a great majority of cases the purchaser would much prefer to have this done, than to send to a number of places to get separate parts of one order. What possible harm can there be in asking beforehand whether such substitution is desired by the customer or not? The author thinks that figures giving the size of a fruit are of no use to the reader; but surely there are some kinds that are smaller than others, and figures giving the largest size that any variety has been known to reach are surely some guide. Quite as much so as drawings. We have in this book an illustration of Albany seedling an inch and a quarter wide, and of Prouty two inches wide. Why not say " $1\frac{1}{4}$ inches" and "2 inches" as give cuts of these varieties?

Aside from the criticism that the author invites, there is a great deal wholly new to the literature of small fruits that will make the work welcome everywhere.

We give the following chapter on winter protection of the raspberry as illustrative of the practical character of the book:

"Many of the red raspberries, and some of the Black-Caps, are killed back to the ground when no winter protection is given. The foreign varieties are all tender, and their hybrid seedlings are not usually hardy. There are not more than two or three varieties of marked excellence that can be safely exposed to our Northern winters. The Turner and Cuthbert are seldom injured, but even these will yield larger and finer fruit when protected.

"The covering of the raspberry need not be heavy—only just enough to keep the plants in place. Many are frightened when told that the

plants require protection; but the labor is not half as great as might be supposed. Soil affords the best covering, and is always at hand. The method is as follows:

"First, run a furrow between the rows, to loosen the ground, and let a shovelful of dirt be thrown by the side of each plant, near its crown, so as to raise a small mound over which to bend the canes. This will prevent breaking by too short a curve. Let a boy bend the canes over the mound, all in one direction, and in line with the row, and hold them while the shovellers, one on each side, throw on dirt enough to keep them down, as represented in the accompanying cut. In this way pass along the rows rapidly, and complete the covering more at leisure. The illustration shows at a glance the



method of bending down the canes, *a* representing the mound, and *b* a shovelful of dirt thrown on the tips as a weight. The mark of cancellation at *c* indicates the point at which the canes should be pruned to give the plant a bushy form. In the way here described a large "patch" may be gone over in a day, and no labor will be better rewarded, whether the variety be tender or half-hardy. Slight protection will bring the plants through the winter uninjured, and ensure larger and better fruit. Some recommend turning a furrow up to the plants on either side, but this cuts and exposes the roots too much.

"As soon as the frost leaves the ground in spring the plants should be uncovered and tied up to stakes. For removing the dirt from the bushes a fork is preferable to a hoe or shovel. The treatment of the raspberry should be such as to secure mature wood before winter. For this reason the application of manure in mid-summer, and cultivation early in autumn, thereby causing a late growth, should never occur. Top-dressing after the leaves have fallen will do no harm, and the whole ground should be thoroughly cleaned before winter sets in."

REPORT OF FORESTRY DIVISION OF THE UNITED STATES DEPARTMENT OF AGRICULTURE. Vol. 4. Edited by Nathaniel H. Egleston.

The government reports on forestry contain an immense amount of facts in connection with American forests and forest planting, that give them a great value as works of reference, and make them almost essential in every forester's library. The present volume is at least equal in

this respect to any of its predecessors. The facts collected this time relate chiefly to the Southern States, the prairie and desert States, and the States bordering on the Pacific. A distinctive feature is a mass of correspondence digested, showing what has been done in the way of planting, and what kinds have been found the most successful in different places. This is the class of facts that will be of the most benefit to American forestry. After reading this report we are more than ever convinced of the utter hopelessness of trying to preserve the old forests, and the utter worthlessness of preserving them even if the task were within human power.

HORTICULTURE AND LANDSCAPE GARDENING IN THE WEST.—Bulletin No. 12 of this Department of the Michigan Agricultural College contains a paper by Prof. L. H. Bailey, Jr., in which a list of evergreen trees and shrubs that have been found to do well at Lansing is given, and which will be a very useful guide to those interested in the ornamentation of grounds in that section.

HORTICULTURAL ART JOURNAL.—Published by Mensing & Stecher, Rochester, N. Y., gives monthly four small quarto colored lithographs of trees or fruits that are popular or becoming popular with nurserymen and dealers, with the histories of the same. It meets a want which the trade appreciates, and seems to be a success, as No. 4 is promptly on hand.

SCRAPS AND QUERIES.

THRIPS OR THRIp.—A friend says: "Please excuse me for the liberty I take, of suggesting a small matter connected with correct grammar in horticulture, for some of the correspondents of the *GARDENERS' MONTHLY*. It seems desirable that writers on horticultural subjects should not fall into mistakes. Some writers make the word thrips, the name of a small insect, in the plural number, with "thrip" for the singular. (See p. 109, April number.) The termination coming from the Greek letter ps (χ), cannot be correctly changed by dropping the s for the singular, any more than making len the singular for lens, or cutting off a part of the x in box. Several other scientific persons adopt the error, among the rest Prof. Forbes, of Illinois."

[Our friend is certainly right. It should be thrips whether singular or plural, just as we say scissors or sheep; and yet we are sorry that it must be so—sorry that we are not permitted to alter an adopted word, when it interferes with the

genius of the English language in regard to its grammatical forms, and that thus it becomes necessary for the grammarian in giving rules to note exceptions so numerous, that in the end there is really no rule at all. In the writer's younger days, it seemed too bad that one could not say sheep when more than one sheep was intended, or a scissor, when we meant only one scissors, that we had to introduce a superfluous word in order to explain our meaning—that we should have to say a "pair" of scissors when we meant only one, and a "flock" of sheep when we referred to more than one. And even yet, if he had a few men of mettle to back him up, he would insist on saying thrip when he meant only one insect, or the one class, and thrips whenever the plural was intended. And remembering that the "blood of the martyr is the seed of the church," he might even go further and risk the fate of a reformer. But it is not so clear that the seed he might sow would, after all, get a chance to develop, so a thrips let it be.

HEART-LEAF ASARUM ARIFOLIUM.—Under the above common name, a Southern lady sends a leaf which proves to be the *Asarum arifolium*. She gives the following interesting notes of local history concerning it. The corn-beads referred to, are the stony seeds of a grass called Job's Tears, or *Coix lachryma*:

"From my earliest recollection, I have been familiar with the plant, always under the name of heart-leaf. I never knew any other. When a child, playing with the little negroes of the plantation, I delighted to find these brown, jug-shaped blossoms, which we often tore open to "paint with," the inner surface leaving a bright reddish-purple stain on paper. The little negroes designated the flowers as "geese and ganders," the latter being white, longer and more slender than the greenish-brown ones. I knew a Northern gentleman long ago, who had a habit of keeping the dried root in his vest pocket, for the purpose of nibbling it for its aromatic flavor. He seemed curiously fond of it. My old colored nurse, Mamma Nancy, who nursed me when an infant, and is with me still, says that heart-leaves were used on the plantation to apply to burns and sores from scalding. She says that my father always cultivated the "corn-bead" in the flower garden as an ornament, and that the poor women of the country, as well as the negro women, would string necklaces of the beads, or seeds, and put them round their babies' necks for them to bite when teething.

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

SPECIAL PRIZES FOR HYBRID PERPETUAL ROSES BY THE MASSACHUSETTS HORTICULTURAL SOCIETY.—The following special prizes are offered for Hybrid Perpetual roses at the coming Rose Show of the Massachusetts Horticultural Society, on Tuesday and Wednesday, June 22d and 23d, 1886:

Prize A. Best 24 Roses, different vars., named, value	\$30 00
" B. " 6 " " " " " 2d Prize "	15 00
" C. " 12 " " " " " " "	10 00
" D. " 18 " " " " " " " "	15 00
" E. " 6 " " any 2 varieties, 3 of each, "	25 00
" F. " 12 " " " 4 " " " " "	15 00
" G. " 18 " " " 6 " " " " "	25 00
" H. General Display of Roses grown in Open Culture, all classes except Hybrid and Moss.....	15 00
" I. Best and best kept Design, Table Decoration, or combination of Roses, in baskets or other receptacles excepting vases.....	18 00
Second Prize.....	12 00

AMATEUR'S PRIZE.

Prize J. Best 24 named Roses, different varieties, exhibited by an amateur.....value	\$30 00
Second Prize.....	15 00

No person or firm can compete for more than two prizes, and any person competing for the amateur prize may duplicate varieties shown in that class in competing for other prizes.

All roses competing for these special prizes, with exception of Prize I, must be exhibited in boxes of the dimensions named below, which will be furnished by the Society on application.

Length.	Breadth.	Height.
For 24 Roses 4 ft.	1 ft. 6 in.	Back of box 6 in.; front 4 in.
" 12 " 2 ft. 2 in.	" " "	" " "
" 6 " 1 ft. 6 in.	" " "	" " "

Two boxes of 12 each will be considered as one of 24, or one of 12 and one of 6 will be considered as one of 18.

Special prize No. 137, in the Schedule, will be a piece of plate instead of money.

Moss roses offered for prizes Nos. 153 and 154 may be shown in vases instead of boxes.

E. W. WOOD,

Chairman of Com. for Establishing Prizes.

THE PANSIES FROM WASHINGTON.—It appears that the pansies from "Washington, D. C., were from Washington Street, Wilmington, Delaware," as the following note reveals: "You in report in MONTHLY, made a mistake in addressing the pansies from Washington, D. C. I took the first prize for pansies with 96 varieties, the largest flower measuring $2\frac{3}{4}$ inches, the smallest $2\frac{1}{4}$ inches in diameter. I have them at present that measure $3\frac{3}{4}$ inches in diameter. Please correct the error in your MONTHLY, and oblige

JOHN STEWART, Florist,

"Eighteenth and Washington Sts.,

"Wilmington, Del."

AMERICAN NURSERYMEN'S CONVENTION.—This society, which has done so much to elevate the

nursery trade, and to place its extent and importance in a proper light before the public, will meet this year at Washington, D. C., in the Agricultural Department rooms, on the 16th, 17th and 18th of June. All information can be had of the Secretary, D. Wilmot Scott, Galena, Illinois.

MISSOURI STATE HORTICULTURAL SOCIETY.—The summer meeting will be held at Louisiana, Missouri, on the 8th and 9th of June. Mr. L. A. Goodman, of Westport, Missouri, tells us that the free entertainment for all the members will be offered, and that railroad rates will be given on application to him.

NATIONAL GRAPE AND WINE GROWERS' ASSOCIATION.—The following letter is printed just as received:

"OFFICE OF NATIONAL GRAPE AND WINE GROWERS' ASSOCIATION, No. 24 PARK PLACE, NEW YORK, April 24th, 1886. }
"EDITOR GARDENERS' MONTHLY:

"Dear Sir—Please make the following announcement in your paper relative to the Viticultural Convention to be held in Washington. The Convention of the vine-growers of the United States, call for which was issued in February last, will be held at the Agricultural Department buildings in Washington, opening on Tuesday the 18th of May next, and continuing four days. The exposition of grape products, wines, raisins, etc., will be held in an adjoining hall in the same buildings and at the same time. All exhibits from States east of the Rocky Mountains should be addressed to Mr. Chr. Vander, 909 7th street, N. W. Washington, D. C., the local member of the Committee, who has kindly consented to take charge of the exhibits until they are placed in the exhibition hall. Addresses will be delivered before the Convention by the Commissioner of Agriculture, Hon. Norman J. Colman, Prof. C. V. Riley, and some fifteen or twenty others prominently connected with viticulture in the United States.

"Yours truly,

"B. F. CLAYTON,

"Chairman Committee on Organization."

[It is printed in order to show the stupidity in common things exhibited by some who run conventions. They write a letter to the Editor of a monthly magazine, on the 24th of the month, which letter reaches his table on the 28th, asking him to insert a notice in the magazine which is to be printed, folded, bound, addressed, mailed, and in the hands of subscribers hundreds of miles apart a few days later.

We should not care to comment on this stupidity if it were a rare occurrence—such rarity would make it a personal matter which has no place in our columns—but it is not only common stupidity, but the absence of the impossible notice renders the Editor "stupid and indifferent to horticultural progress" in the eyes of many whom it is our duty to enlighten as we are now doing.



TYPE OF NEW MAMMOTH VERBENA.

NEW VERBENAS

(Mammoth Strain.)

SPLENDID HEALTHY STOCK

Century. Brilliant scarlet, clear white centre.

Crystal. Pure white.

Damson. Rich purple mauve, clear white centre.

Edith. Salmon shaded carmine, centre white.

Emily. Royal purple, clear large white centre.

Fanny. Violet rose, large white eye.

Glow-worm. Brilliant scarlet, perfect form.

Jean. Rosy pink, distinct white centre.

Lapis Lazuli. Blue, perfect form.

Miss Stout. Carmine scarlet.

Maltese. Lilac shaded blue.

Mrs. Massey. Salmon pink, large white centre.

Marion. Mauve; perfect form, white centre.

Nelly Park. Orange scarlet; splendid.

Price 20 cts. each; \$1.50 per set of 14; \$8.00 per 100; \$35.00 per 500; \$60.00 per 1000.

Verbenas—General Collection.

The 12 finest and most distinct market sorts, \$3.00 per 100; \$25.00 per 1,000.—All named. Wholesale list on application.

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NO ROSE GROWER SHOULD BE WITHOUT IT!

Original Bags of 50 kilo (about 110 lbs.) sold at \$6.50 per bag; 25 lbs. sold at \$2; 10 lbs. sold at \$1; single lb. sold at 15 cents.

DIRECTIONS FOR USE.

OUTDOORS.—Select a fine calm day when the sun is well out and the dew gone; apply with SULPHUR BELLOWS. Three applications are generally sufficient.

UNDER GLASS.—Same rules apply; select a day when the sun is well out, and do not apply whilst foliage is still wet from watering, else the sulphur would fasten thereon and spoil the appearance of plants. The weight of this sulphur is so light, that when blown into the air it will distribute like a fine cloud, and in settling reach the upper as well as the lower part of each leaf, thus combining with an easy application a radical cure.



FIR TREE OIL

INSECTICIDE for destroying all insects and parasites that infect the roots; such as mealy bugs, American blight, red spider, scale, thrip, green and black fly, woolly aphid, caterpillars, grubs, ants, worms, lice, fleas, &c. **SURE CURE**, if used as per directions.

FIR TREE OIL does not contain any poisonous properties, and is harmless to the hands and skin.

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Price, half pint bottles at 50 cts. Smaller bottles, 25 cts. each.

Larger quantities at reduced figures.

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We are the most extensive growers of Roses in this country.

No other establishment pretends to offer so large a stock, or so many varieties.

SIZE AND QUALITY.—Our Roses are grown in 2½-inch pots, straight, and are strong, vigorous plants, ranging in height from 6 to 12 inches, according to variety.

ALL OUR ROSES ARE ON THEIR OWN ROOTS and are grown in ordinary soil, without manure or stimulants of any kind; therefore they require no petting, but start quick, grow rapidly, and come into market early.

OUR PRICES ARE THE LOWEST, quality considered, that can be had anywhere. **WE HAVE ALL THE FINEST ROSES, BOTH NEW and OLD VARIETIES—HYBRID PERPETUALS, HYBRID TEAS, POLYANTHAS, EVERBLOOMERS, CLIMBERS, MOSSSES, &c.,** ready for shipment every working-day in the year—no danger from frost or heat.

Also **HYDRANGEA GRANDIFLORA** (all sizes), and a full line of **HARDY SHRUBBERY, HONEYSUCKLES, and CLIMBING VINES.** Large strong plants from open ground, at very low prices.

TRADE PRICE LISTS for **FLORISTS, MARKET GARDENERS** and **DEALERS** free on application. Address,

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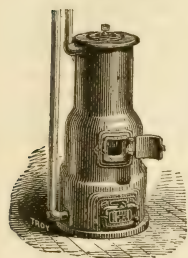
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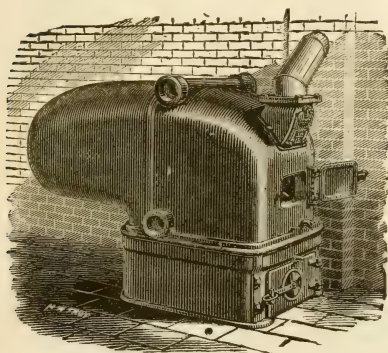
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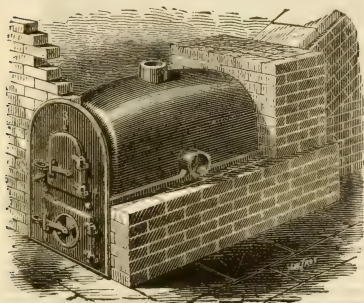
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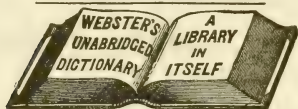
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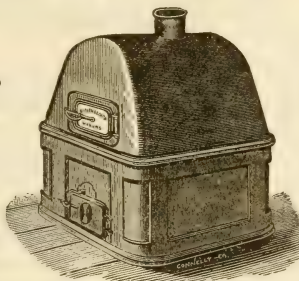
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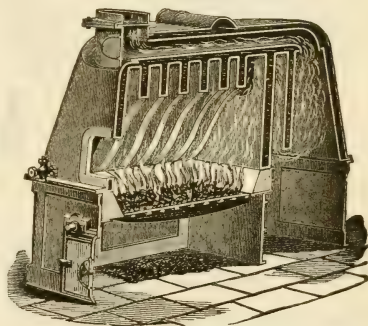
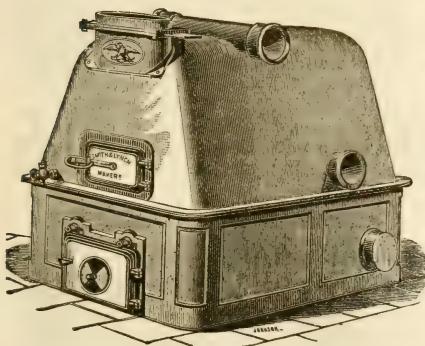


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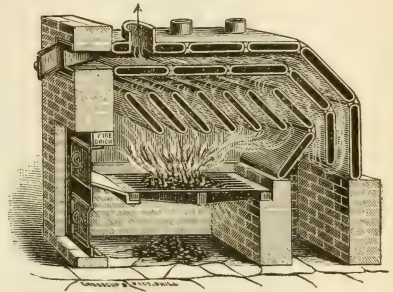
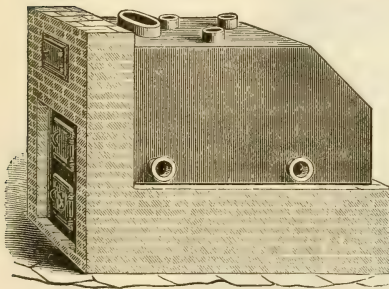
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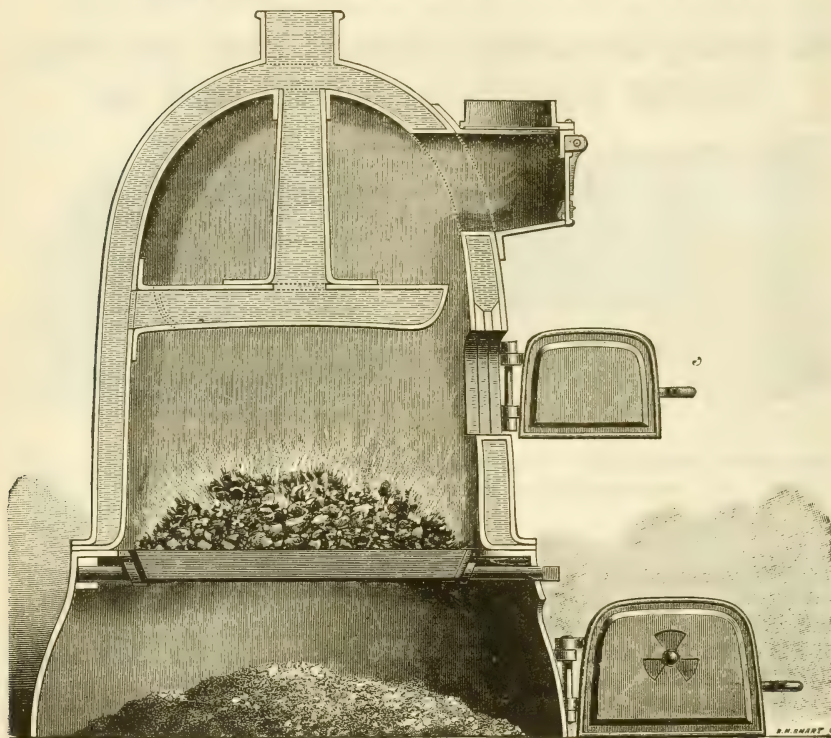
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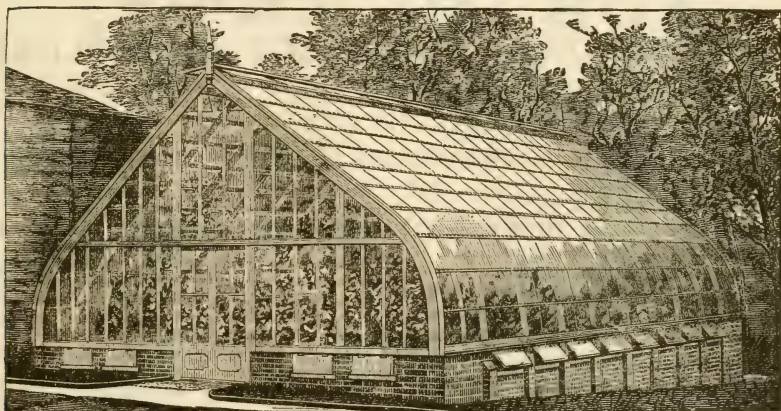
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Edited by THOMAS MEEHAN.

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JULY, 1886.

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FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

Every now and then a perfect craze possesses people in behalf of some new thing. In our country half a century ago, there was a craze for a

There have been crazes in catalpa and other trees, and crazes in roses and various flowers. In Europe there was the great craze in tulips, and in some respect the mania extended to hyacinths, and other bulbous flowers; and though there has been a good deal of the commercial money-making spirit evolved in all these crazes, the genuine love of



Hyacinthus candicans.

particular kind of mulberry; and later a craze on new kinds of grapes, when even a single eye of some one variety would sell for at least its weight in silver, if not in some cases for its weight in gold.



Hyacinthus botryoides.

trees, plants and fruits, has underlied them all. In regard to the so-called Dutch bulbs, the genuine love has been hearty and continuous, and so far as our country is concerned, has stretched out its arms, until bulbs of every character and variety are being gathered within the floral circle. A few of these are best planted in spring; but, a large number are hardy, and should be planted in

autumn, and hence are quite in place under our "Seasonable Hints." The hyacinth, of course, is easily elected President of the Bulb Republic. As we buy them they have been subjected to treatment. The little fellows are not permitted to waste their substance, but the blossoms are picked



Colchicum autumnale.

off, till the bulb is large enough and strong enough to make a large fine spike. Then we admire them. This is why bulbs once flowering with us do not do so well the second year. Americans could make them come in again in a few years, if they had the time to wait, and the patience of the Hollander. Our time is supposed to be more valuable, so the Dutch bulbs are bought. The size of a bulb, is however, no criterion of its value. A first-class bulb ought to have but one flower spike, and



Iris Germanica.

this spike should be thrown well up above the leaves. The bulb that sends the leaves up beyond the spike is defective. Not always, however, is this [the] fault of the bulb—the treatment by the grower has a great influence. So far as we know there is no method by which the buyer can be sure,

absolutely sure, of a first-class bulb; and we are left to the poor consolation of believing that the highest price bulb is generally the best, and then we have to "shut our eyes, and open our purse, and see what luck will send us"—slightly varying the nursery phrase. There has not been much improvement in new races of hyacinths, as there has been in other plants. During the American Centennial in Philadelphia, a new species called *Hyacinthus candicans* was introduced. It is well worth cultivating for its own beauty; and may be the parent of a new class some day.

A remarkably pretty hyacinth, is the species known as grape hyacinth, *Hyacinthus botryoides*, of the older botanists; though now *Muscari racemosa*. It has become wild in many places in the



Amaryllis Atamasco.

eastern part of the United States, though worthy of culture where it does not grow naturally. There are white and other shades cultivated, in Europe, as well as the blue so common here. Tulips, in their various classes of early, single, double, parrot, and others, are well known, as are snow drops and crocusses; while the narcissus in many classes have jumped into notoriety as the craziest of all the floral crazes of many years. The different species have here been so hybridized and crossed, that in the endless variety no one hardly knows one from another.

The meadow saffrons flower even earlier than the crocus; even in the fall of the year of planting if the season be favorable. A sketch of one species, *Colchicum autumnale*, is herewith appended.

In the Old World *Anemone* and *Ranunculus* are very popular, but have not received the atten-

tion here that their beauty deserves. They do not continue so long in bloom as other things, and this may be a little against their popularity. The Iris is rather a summer flower than a spring flowering tuberous plant; but it is one of those that requires fall planting in order to secure the best success. A number of species are native to our own country, and thrive well under culture. The Chinese or Kæmpferi class has added much to our treas-



Gladiolus Saundersoni.

ures during the few past years; but the German Iris, of which we annex an illustration, furnishes most of the variety that adorns our gardens.

We need not—for our readers surely—take space to paint the virtues of the lily, but may say that if set early in the fall in very rich ground, not less than four inches beneath the surface, and in soil not very dry, they will paint themselves more superbly than we are accustomed to see them. Among gladiolus there are some varieties of the

communis and ramosus types that are tolerably hardy, and are best planted in fall. These branch more than hybrids of the pure gandanensis type, as the illustration annexed shows.

In regard to Amaryllis, the most are from the Cape of Good Hope and are not hardy; but a number are well adapted to be set out in the fall in American gardens. One of these, the Atamasco or Fairy lily has had none too much said in our pages recently, and the Jacobæ Lily, *Amaryllis formosissima*, is another hardy kind.

Of course those botanically inclined will rise to remark that neither of these are true *Amaryllis* now, but have other botanical appellations.

Then there are a large number of bulbs of our own country, that are well worthy of culture, and



Calochortus venustus.

may be sent out in the fall of the year. There are beautiful things among even so commonplace a family as the onion, or botanically the genus *Allium*; and the Brodiaeas, Calliproras and *Calochortus* of the far west, should by no means be overlooked. The latter genus which comprises the well-known Mariposa Lilies are particularly handsome. The annexed illustration is of a species that furnishes the most pleasing variety.

For the cuts used to illustrate this whole article (except the last), our readers are indebted to Mr. Blanc, of Philadelphia, the well-known artist, who makes a specialty of floral and garden work.

The culture of bulbs, such as we have referred to, has been more or less undertaken for years; but often without the success the gardener desires. The common idea is that bulbs are generally found in poor dry places in a state of nature, and natural conditions should be followed by the cultivator, as far as possible. But the experienced cultivator

knows better. To have the best success he must have very rich soil, very deep soil, very cool soil, and soil that will never be tempted to dry out when the first uncertain wooing of the spring sun is attempted.



Amaryllis formosissima.

We are satisfied that dry, poor soil is the main cause of fungus disease and difficulty of which so many complain in out-door bulb growing.

COMMUNICATIONS.

NOTES AT THE GROUNDS OF THE DEPARTMENT OF AGRICULTURE, WASHINGTON, D. C.

BY M. H. LESTER.

People who stay at home have the satisfaction of knowing that they often see things in better shape than they would after making a long journey. The full force of this was impressed on me, and noted for future reference, a day or so ago, by a tour through the Agricultural Department grounds. The display of tulips and hyacinths is simply immense; there is a somewhat corrugated line of tulips in mixed colors the whole length of the large conservatory, and it is gorgeous; then there are beds of yellow and white and Bizarre, double and single, and such great clumps, twelve and fifteen flowers on a clump; and the hyacinths are famous. Just think of it! Thousands of flowers of this description under the eye at once, and great big clumps of pæonies, and patches of Papaver orientale coming along to take their place; and goodness only knows what is coming along as successors to these. I found the varieties of magnolia that bloom together about at their best. *M. Lennii* is a fine variety, with large purple flowers of great substance. A beau-

tiful sight were the great clumps of Forsythia and Cydonia, or Pyrus Japonica. Some of the latter would actually dazzle one with their brightness, and such large clumps look so fine at a distance.

Does anyone know of a plant or flower that is not the better for being massed?

That great, big, white, Hawthorn-looking tree turns out to be *Amelanchier botryapium*; but let no nurseryman get up a stock of this; he could not get rid of one in twenty years. "It's a wild plant; grows out in the woods;" but nothing better in its way ever came from China, or Japan, either.

The varieties of Japanese maple are commencing to show their colors, and will be delightful in a week or so. Inside there is a *Pritchardia macrocarpa*, worth going a thousand miles to see; splendid specimens of *Oreodoxa regia*, *Seaforthia elegans*, *Thrinax argentea* and *elegans*, *Kentias Balmoreana* and *Fosteriana*, and *Cocos* of almost every variety. I notice a good many *Chamerops* and *Chamodorea* in bloom, and several other very interesting things. It is no wonder the place is thronged with visitors all the time.

Georgetown, D. C.

THE AMARYLLIS IN THE SOUTH.

BY P. H. OBERWETTER.

Another year's trial of the *Amaryllis* confirms what I wrote about a year ago, that this family of plants deserves a greater amount of attention in the Southern States than it has hitherto received. But these plants have some ardent admirers all over the South, and they need only a little pushing to the front to make them very popular, for the ease with which they can be cultivated is not the least point of their merit. And for the first time, so long as I cultivated these charming flowers, I have to report a few losses in last winter's cold spell; but the loss is rather due to carelessness on my part than to the tender constitution of the *Amaryllis*.

I had about twenty different species and hybrids planted in the upper part of my garden in a somewhat sloping situation. The heavy rains in autumn must have washed some soil away and brought a few of the plants too near the surface; then the very cold weather early in January made the frost penetrate to those bulbs that were not deep enough in the ground, and if it did not kill the bulbs, weakened them so that this year they made a poor show. But the winter was characterized by such a severe cold as we fortunately do not ex-

perience very often. And then I had twelve hundred hybrid seedlings of *Amaryllis* growing in the lower part of my garden, where the north wind could not strike so hard—my garden is sloping to the east. These seedlings I had given last fall a thick layer of stable manure, and of these twelve hundred plants I have not lost a single one; but I had in my cold pit five hundred hybrid seedlings of last summer, and I lost about half of these through frost coming in.

This latter case is in my opinion a good illustration of Darwin's theory of natural selection, for it was strange how frost had picked plants in different parts of the boxes, and not merely taken those on the rim, so that I think those with a weak constitution were killed while the robust ones survived.

Therefore I reiterate again that all *Amaryllis* are hardy in the South; it does not make any difference whether the particular plant has a catalogue price of seventy-five cents or ten dollars; the cheapness does not make the plant hardier nor the costliness more tender; on the contrary, my two highest priced bulbs, *Amaryllis psittacina* and *A. fidelio*, which cost me nine and ten dollars each, came out unhurt, while *Amaryllis atrosanguinea*, which is sold at seventy-five cents, had suffered. Finally, I would advise those interested to plant your *Amaryllis* in a sunny place, not too wet, as this would no doubt be hurtful in winter; give at least 5 inches of soil on top of the bulb, and as soon as the first frost in autumn or winter has killed the leaves and stopped their growth give a good, thick covering of stable manure. This latter may in spring be hoed under. With this treatment I have succeeded and have cultivated my seedlings, only two and a half years from sowing the seed, and many are now large enough to flower. In conclusion I would say, that I am pleased to notice the many reports from the Southern States in regard to the hardness of different plants. *Austin, Texas.*

AMARYLLIS ATAMASCO.

BY MRS. FANNY E. BRIGGS.

The "Pink Atamasco Lily" referred to in my article in January number is not merely "pink tinged," but a very bright pink. I have known this plant for twenty years; have received it from Pennsylvania, Delaware and Texas, as *A. Atamasco*, "*Atamasco Lily*" and "*Spanish Lily*;" correspondents in Delaware and Texas expressly stating that it was native. There seems to be a

general impression among the correspondents of the GARDENERS' MONTHLY that the *Atamasco Lily* is white only, but Mrs. Thomson in her article in June, '85, quotes from Peter Henderson's "*Hand Book of Plants*:" "*Zephyranthes*—One of the best species is *Z. Atamasco*, generally known as *Amaryllis Atamasco*, and in our cottage gardens as '*Fairy Lily*.' This species has beautiful pink flowers which are produced in great abundance throughout the summer."

I copy the following from Wood's "*Botany*" (an old edition): "*Amaryllis Atamasco*.—*Atamasco Lily*. Spathe 2 cleft, acute; fls. pedicelled; cor. campanulate, with nearly equal petals, sub-erect. Leaves, linear, a foot long; scape, round, 6 inches high; flowers, large, solitary, white and pink. Found in Pennsylvania, south to Carolina."

I will add that I have now the pink kind growing side by side with Mrs. Thomson's white. Now, May 9th, the leaves of each are 6 inches long, and I can see no material difference between them save that those of the pink have a darker shade at the base, but not so much difference as there is in the leaves of other flowers that are variously colored, as *Balsams*, *Snap Dragons*, etc.

La Centre, Washington Ter.

[This rosy pink variety is also the one which has long been under cultivation in the vicinity of Philadelphia.—Ed. G. M.]

THE FLOWERING ASH.

BY WM. FALCONER.

If you or any of your readers have flowering plants of the genuine *Fraxinus floribunda*, will you kindly tell me something about it? We have several specimens 10 to 16 feet high of *F. Ornus*, the common flowering ash. They came into bloom about the middle of May, were in perfection about the 20th, and on some of the trees the flowers lasted in moderately good condition till the end of the month. Several of the trees have their trunks and branches a good deal injured by borers.

Mr. Barlow in his beautiful grounds near here has a large specimen of what he regards as *F. floribunda*. It blooms at the same time and in general appearance its flowers are like those of *F. Ornus*. But its leaves are less ample, and the leaflets narrower and more acuminate. Some two years ago Mr. B. gave us a young plant, a layer from his old one, and I have grown it in rich, moist land, in our nursery patch. It has

made vigorous growth. The leaves and leaflets of this young plant are, except perhaps a little more acuminate, almost identical with those of our *F. Ornus*. Youth, vigor and good living have caused the change. Loudon says *F. floribunda* blooms in April and *F. Ornus* in May and June.

[*Fraxinus floribunda*, of Wallick, is a Nepalese plant, and believed to be a distinct species from the *Ornus* of the south of Europe.—Ed. G. M.]

MANETTIA CORDIFOLIA.

BY D. F. W.

Last September I wrote you in regard to *Manettia cordifolia*, published in your October number, page 290, wherein the hardiness of this beautiful plant was pretty thoroughly tested. I had not then satisfactorily tested certain other conditions of the plant, hence did not refer to them, though your lynx-eyed and careful thinking editor in his foot-notes caught the idea and nearly put at rest any further experiment in the premises on my part. There is, however, enough of the Scotch-Irish element in your orator to "go ahead;" so I continued and further experimented with the plant during the past winter, noted for its long and continued hard freezing. It has had no precedent in this region within the "recollection of the oldest inhabitant." I left the plant without protection during the long dreary winter, exposed to all its severity, to take the chances "to live or die."

I had supposed that the crown buds might possibly be killed and the dormant root buds below the frost-line would shoot forth new stems. On examination, I found many of the crowns uninjured. They were fully 6 inches below the surface, and those that were injured threw out new shoots from below.

The plant has put forth many vigorous and healthy vines, some now (May 18th) 18 inches high. Many of those coming from below the injured crowns are not yet above the ground. Its hardiness cannot be longer questioned in this latitude under ordinarily fair conditions, and I believe it can be grown in the open ground as ordinary perennials, several degrees of latitude farther north, with reasonable protection, if planted deep in rich, friable and well drained soil.

I hope Mr. Parnell and others have tried, or will try it in their section, and report their success through the GARDENERS' MONTHLY.

Nashville, Tenn., May 18th, 1886.

[Over a quarter of a century ago, the writer of this discovered that a choice greenhouse plant,

Akebia quinata, was entirely hardy. It eventually became one of the most popular of hardy climbing plants. It is always a source of gratification to him to note the pleasure hundreds are receiving from this lovely "vine," who would have been deprived of this pleasure but for the fortunate discovery. Surely if he who makes two blades of grass grow where only one grew before, is a benefactor to mankind, one who makes thousands of pleasure-giving things appear where none before existed, may also lay claim to popular beneficence. We are sure Mr. Wilkin may share in our *Akebia* gratification, and in the Cobbettian benediction, when he hands over to the hardy flower garden this beautiful plant. It is a great advance in the pleasure of gardening to rank the *Manettia* among hardy herbaceous plants.—Ed. G. M.]

CHIONANTHUS VIRGINICA (FRINGE TREE)

BY CULTIVATOR.

This, though found chiefly in our swamps, is equally at home upon the lawn, and is a gem among deciduous flowering shrubs. Its long racemes of pure white flowers seem to have a charm about them which the most careless lover of nature cannot help but admire. A plant of it in the grounds here, planted against a background



of evergreens, is about 12 feet high and 25 feet in circumference, and at the time of writing is indeed an object of admiration. I would advise anyone contemplating planting shrubs to include this in their list; and they will have better success by buying from some reliable nurseryman than

by digging from the swamps. It is said that when grafted upon the common ash it attains larger proportions. *South Virginia, May 6th, 1886.*

HARDINESS OF THE GLADIOLUS.

BY MRS. FANNY E. BRIGGS.

The hardiness of the Gladiolus is referred to in the May number. They will survive most winters here without any protection. I have them now 8 inches high from roots left last fall; but it is seldom that the mercury falls to zero, and the coldest last winter was 16° above, and that only for a few nights in January. Dahlias left in the ground are often uninjured, and do better than those taken up, but in neither way are they as satisfactory as at the East. Though we have no severe cold, there is little hot weather, and the nights are always cool.

La Centre, Washington Ter.

[In Washington Territory the earth is probably covered by snow in the winter which prevents the frost from penetrating deep. Sometimes when an Eastern winter is marked by early and deep snow, the potato will live out all winter, though the atmosphere may be very low. It is usually bitten when the lightest frost reaches it.—Ed. G. M.]

NEW OR RARE PLANTS.

ACTINIDA POLYGAMA.—This rather new and still scarce climbing plant, has flowered freely in several places this year, and promises to be a valuable addition to our already large list of climbing plants.

The foliage and habit is very much like the "Bitter-Sweet," *celastrus scandens*; but the flowers are in clusters of rather large, waxy white flowers, sweet, and showy. Though we have many white-

flowered plants of the "Vine" class, there is some peculiarity about the growth of this which makes it attractive. It flowers in June.

LILACS.—Besides the new lilac described by Prof. Sargent, there are two species long introduced, but still scarce, by which the "Lilac season" may be prolonged to near midsummer. These are from Eastern Asia, and are known in catalogues as *Syrinja Josikae*, and *S. Emodi*. The former is of a dark purple; the last a light purple.

A NEW LILAC: SYRINGA JAPONICA.—Prof. Sargent tells the *Gardeners' Chronicle*:

"Mr. W. S. Clark, at that time president of the Agricultural College at Sapporo, in Japan, sent to the Arboretum, in the autumn of 1876, seeds of an Oleaceous plant described by him as a small tree. The plants raised from these seeds flowered last summer for the first time, and proved to be *Syringa japonica*, a species well described and figured by Decaisne in his Monograph of *Ligustrum* and *Syringa*, and a native of both Nippon and Yesso.

"*Syringa japonica* has grown in cultivation with great vigor and rapidity, and already forms a small tree, 15 or 16 feet in height, with a clean straight stem covered with thin, very smooth, rather light-colored red bark, resembling that of a young Cherry tree. The small white flowers, almost entirely destitute of perfume, are borne in immense compound panicles, 18—24 inches long, and 16—18 inches broad. The plant flowers very freely here during the first week in July, and remains a long time in bloom.

"The leaves, unlike those of many Japanese plants in this climate, fall early and without changing color; they are 5 or 6 inches long, acuminate, cuneate at the base, coriaceous, strongly reticulate-veined, quite smooth above, the midrib and primary veins slightly pubescent beneath.

"This Japanese Lilac promises to be one of the most magnificent of all flowering trees hardy in this climate. It is perfectly hardy; it grows with great rapidity, and promises to attain a considerable size; and it has the advantage of blooming here after the flowering period of most trees and shrubs has passed."

GREENHOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

PROPAGATION OF ANTHURIUM.

BY GEORGE FREESE.

I have read in the February number of your esteemed magazine under the heading "Orchid Queries," "J. R.," New Bedford, Mass., asking: "Would like to know most easy way to get a

stock of *Anthurium Warroqueanum*, and the easiest mode of propagating it."

Anthurium Warroqueanum, like the beautiful *Anthurium Veitchii*, grows in the interior of the Republic of Columbia, S. A., in warm, damp valleys, on the trunks of trees. They have never been largely exported, as they are difficult to obtain, because they grow in the dense forest, inhabited only by Indians, and the places where

they grow are known but to few collectors. The propagation of *A. Warroqueanum* by division, I believe, is an exceedingly slow process, and with the *A. Veitchii* even very difficult. The best plan to get a stock of them is to import them from their native country.

Bogota, South America, March 30th, 1886.

CULTURE OF PERPETUAL CARNATIONS.

BY JEAN SISLEY.

When the cuttings rooted in a hot-house during winter have been hardened in a pit or a greenhouse, they can in May stand a long journey without or with very little earth at the roots and packed in damp moss. On arrival the roots must be dipped in water, and immediately planted in a very airy situation, shaded for a few days if the sun is shining. They must be kept moist, and when they are in a growing state watered from time to time, at least once a week, with liquid manure.

When they are about 4 inches high they must be pruned to about half their size to obtain side shoots and flower buds. By this process they will bloom in autumn. When the flower buds are well formed they can, if destined for in-door decoration, be potted in 6-inch pots and put on slight bottom heat in a pit or a stove; shut for about a week and then aired gradually when the weather permits for another week, and as soon as the buds begin to expand they can be taken in-doors.

Of course, those destined for that purpose must have a certain quantity of flower buds, and those which do not bear a sufficient quantity must not be potted, and kept for next spring flowering, and potted in March or April. *Monplaisir, Lyon.*

A DOZEN NARCISSI.

BY R. SMITH.

The *Narcissus* has received much and well-deserved attention of late years, and has now become almost indispensable for spring decoration. Its wealth of color, richness of perfume, and beauty of form come to us when flowers are few and the desire for them great. It is withal, one of the best flowers for cutting purposes we possess. Those who intend making selections of bulbs, with next spring in view, should, "taking time by the forelock," draw out their list some time this month.

The varieties of the *Narcissus* now run up into the hundreds, and many who wish a few are stag-

gered by the formidable array of names presented to them in catalogues. The following twelve varieties are hardy, easily grown, free-blooming and low-priced. They will make an excellent foundation for a more extensive collection, and will flourish in almost any soil. A rich, light soil is, however, the best.

Narcissus bicolor, yellow and white; *N. moschatus*, white and sulphur; *N. moschatus cernuus*, silvery white; *N. Pseudo-narcissus*, sulphur and yellow; *N. Incomparabilis*, yellow and primrose; *N. Incomparabilis albus aurantius*, white and yellow, cup heavily stained orange-scarlet; *N. Leedsii amabilis*, white and lemon; *N. gracilis*, yellow; *N. poeticus*, white, yellow cup, red margined; *N. poeticus ornatus*, white, scarlet margined cup; *N. poeticus plenus*, white, in form like a *Gardenia*; *N. Tenuior* (silver Jonquil), pale primrose.

Germantown, Philadelphia.

HINTS ON SELAGINELLAS AND THEIR USES.

BY CULTIVATOR.

The few hints which I am about to offer upon these, are such as we have practiced with such satisfactory and beneficial results, that I heartily commend them to all in possession of an ordinary greenhouse; feeling sure that they will be rewarded with gratifying results for their labor.

Not only are *Selaginellas* easy of culture, but they delight in situations where the generality of plants would linger and die. Underneath the benches of the greenhouse, or any place where a certain amount of filtered light can reach them, with plenty of moisture, they are at home; thus utilizing and beautifying such situations as are often receptacles for rubbish. But although moisture-loving plants, drainage and a free soil is a point of paramount importance in their culture, as, owing to the necessity of frequent waterings, unless the superfluous moisture can pass off freely, damping is almost sure to take place. Underneath the benches we put cinders, broken bricks, or anything to form drainage. That under the side benches we slope from side of greenhouse to walk-way, and that under the center bench we put in the form of a ridge, thus making it slope to walk-way on both sides. Upon this is laid about four inches of rich free soil. If a few bits of *Selaginella Krausiana*, be now dibbled in a few inches apart it will soon take root and form a verdant bank ever fresh and beautiful, and which even the dullest days of winter have not the power to dim. The position

of pipes or flues in some greenhouses may not admit of the above arrangement, but few can be found without some nook to which the same idea could be beneficially applied. I have recommended *S. Krausiana* as it is one of the very best, being of a hardy enduring character, and few greenhouses are to be found without it. Under the above treatment it makes luxuriant growth, and will be found useful for many purposes. As a covering for the top of pots used in house decoration, if a few handfuls be taken up with some soil attached it will thus form an immediate carpet of the richest verdure. This combination with flowering and bright foliage plants has a very pleasing effect. There are also many more varieties well deserving a place, and a collection of a dozen or so varieties, will in themselves, form an attractive feature in any greenhouse, exhibiting as they do a considerable variety of foliage. *Martensii* and its variegated form seems to enjoy the freedom of being planted out by the high state of luxuriance which it attains. This is very desirable for mixing with cut flowers, standing fresh for a long time in water. Then comes the lovely *S. Cœsia* with its rich metallic fronds, sometimes attaining a yard in length. This makes a beautiful basket plant, the fronds of which should be shorn close off every spring, when it will commence to grow with renewed strength and vigor. The same remark applies to all dense growing *Selaginellas*, otherwise they soon show signs of decay, and recourse must be had to planting over again; but if this cutting back is annually attended to they will remain in good condition, in the same position for years. *S. Densa* and *Poulterii* are very desirable kinds of dense habit; *S. Krausiana aurea*, a golden variety, should be in every collection. *Wildenovii*, a variety with fern-like fronds is very pretty. But it is a difficult matter to make a selection of one better than another, for they are all interesting and beautiful, and one can scarcely go amiss in choosing a collection.

South Virginia.

RUSSELLIA JUNCEA.

BY ALPHA.

The rushy branched *Russelia*, *R. juncea*, is a twiggly, drooping, rush-like plant with greenish branches which spring apparently from the base of the plant, and which are covered with a great profusion of trumpet-shaped scarlet flowers during the summer months. It belongs to the natural order *Scrophulariaceæ*, and is a native of Mexico, from whence it was introduced in 1812. It is a

plant of slender drooping habit, having small, smooth, opposite ovate leaves; and the small trumpet-shaped bright scarlet flowers, which are about an inch in length, are produced from the axilla of the leaves upon a more or less angular stalk so as to form a loose panicle at the ends of the branches.

The *Russelia* is not as extensively cultivated as its merits entitle it to be, for when well grown it is one of the finest vase or basket plants we have in cultivation; in fact, to grow it to perfection as well as to see it in all its natural grace and beauty, it should be grown in a pot or basket and suspended in a light sunny situation from the rafters of the greenhouse. So treated the branches will be enabled to droop and bloom without interruption.

The *Russelia* is a plant that can be easily grown, where it can be given a light sunny situation, and an average temperature of not less than 55°, water being given whenever necessary. During the summer it should be given a higher temperature, and a more plentiful supply of water, both overhead and at the roots. Frequent syringings are of great benefit to this plant, as they not only keep it clean but prevent the attacks of many insect pests to which it is unfortunately very subject.

This *Russelia* is a plant that requires an abundance of room for its roots, and should be grown in a compost of two-thirds well-decayed sods, one-third well-decayed manure, with a fair sprinkling of bone dust; and good drainage is also a most essential point.

Propagation is effected by cuttings of the half ripened wood placed in sand and given gentle bottom heat, and if the young plants are liberally treated and re-potted as often as necessary nice specimens will soon be obtained.

The generic name is given in honor of Dr. Alexander Russel, a celebrated English physician, and the specific alludes to the rush-like branches of the plant. Young plants can be procured at a moderate price of any of our principal florists.

Queens, N. Y.

CULTURE OF THE CYCLAMEN.

BY N. ROBERTSON.

Much has been written about this plant, but we do not see it in collections as it deserves. When we do, seldom is it with that strength and vigor that it would have under proper cultivation. It will always be a plant of considerable admiration. For years I have fought hard with it, following closely different methods of treatment, but never

have reached anything like what I have produced with the treatment of this last winter. The plan I adopted this year was such a complete success, bringing them beyond what my imagination had pictured a good Cyclamen should be, that I give the manner of treatment that others may follow and experience the same gratification as I have. I shall begin where the plant has done flowering, about the latter end of March, where I put them away in some quiet corner, giving moisture enough so that they do not flag. There they remain until the weather is warm enough to put them outside, about the first of June, in a bed where there is sure not to be an over-amount of moisture, at such distances as permit the hoe to be run through at times. Let it be light sandy material. Then perfect drainage will be sure. Some advocate drying up; some, to try and keep them in a green state. I do neither, but strike between; leave them as planted to the mercy of the elements until the fall, before cold, wet weather sets in, when they are taken up and potted in nice, rich, light soil, the pots only large enough to give freedom to the bulbs for a time. After they start awhile they will require a shift, perhaps two, if they succeed well. They are then put away in a low span-roof house on the benches near the glass. There they remain in a temperature not exceeding 45° by fire; it may go a little higher during the day if the sun should come out strong. They will soon start into growth, and by the month of February they will be throwing up a plentiful crop of flowers. In a house of this sort, and with so low a temperature, syringing to keep the foliage moist, so necessary, to the well-being of this plant, will not have to be frequently resorted to, for condensation from the roof will do that for the most part of the time. This low temperature keeps them clear of the attacks of green-fly and red spider, which they are so liable to. These, with a sour tenacious soil, are most detrimental to the Cyclamen. Before the flowers open I have them removed into a show house kept not over 50°. If the weather is at all bright, or the air dry, they are frequently syringed under the leaves, as carefully as possible not to wet the flowers, which are always well above the foliage in the more modern sorts. This is continued until they have done flowering. They bloom a long time if properly managed. There are few things that will create more admiration and add more to the beauty of a house during the dull months of winter than a quantity of well managed Cyclamens.

Supt. Gov't Grounds, Canada.

EDITORIAL NOTES.

FLOWERS AT THE PRESIDENT'S MARRIAGE.— Though every endeavor was made to have the President's marriage private, and hence one has scarcely a right to make public any of the arrangements, some of the persevering reporters have violated the proprieties by pushing in, and "gathering for the public" what it was desired by those the most interested to keep from the public eye. In this way that has become public property to which the public had no right. We give therefore an account of the floral decorations at the marriage ceremonies, abstaining from any criticism thereon, because it seems unfair to publicly comment on what was desired to be a private matter:

"The decorations of the Executive Mansion tonight were of an elaborate character, and, in the language of one of the oldest employees, 'it never presented a handsomer appearance.' The various public gardens in the city, and many private conservatories here and in other cities, contributed their choicest plants and flowers to lend their beauty and fragrance to the scene. Of course, the Blue Room, where the ceremony was performed, occupied the principal attention of the decorators. Their work was certainly well done. It was transformed into a veritable bower of beauty. A stately group of tall exotic plants extended along almost the entire south end of the room, concealing the windows and the south doorway, and rising to within a few feet of the ceiling. The larger plants included *Eugenias* and *Areacas*, and among the smaller ones were crotons, marantas and aspidistras. The foliage plants were interspersed with a large variety of flowering plants, such as the *medinella magnifica*, begonias, hydrangeas, roses and late flowering azaleas. To the right and left of the main entrance, from the corridor, were two groups of flowering pelargoniums, fuchsias, orchids and palms. The centre plant in each group was the royal *Phœnicophorum sechallarium*. On the right and left sides of the room were also two large groups of plants in full bloom consisting mostly of roses, begonias and hydrangeas. Two large *kentzie balmoreamis* in these groups, with their long leaves, formed an arch which stretched almost across the room. In the hearth under the east mantel was a floral arrangement representing a cheerful blazing fire. It was composed of the *Begonia rubra* and *lantanas*. The floor of the hearth was laid in mosaics of color made by *althernantheras*. On the mantel above was a solid bank of cut pansies in various bright colors, in which was written with white flowers the date of the occasion, 'June 2, 1886.' The letters were bordered with black pansies, and the edge of the mantel was formed of the golden *selaginella*. The west mantel sustained a solid bank of roses, in which none but the choicest were used, commencing with the delicate pink at the ends and growing darker and richer towards the

centre, where was interwoven in white moss and hybrid roses the monogram 'C. F.' The space immediately under this mantel was banked with a variety of crotons, astilbe japonica and the golden selaginella. The two large mirrors above the mantels were draped and festooned with garlands of mixed roses. The doors leading to the room were also festooned with heavy garlands of roses in different distinct colors, thin at both ends and thicker toward the centre. Over the main entrance from the corridor was a beautiful floral scroll in which the motto 'E Pluribus Unum' was interwoven in immortelles.

"The decorations of the private dining-room where the wedding collation was served were also of an elaborate character. The main table decoration was a full-rigged three-masted ship, composed of pinks, centaurea, egana, roses and pansies, displaying the word 'Hymen.' It rested on a mirror representing a lake, the shores of which were composed of different varieties of selaginellas and tiny pieces of coral. The surrounding land was represented by banks of General Jacqueminot roses. The national colors hung from the main mast, and two small white flags, with the monogram 'C. F.' in golden letters, hung from the other masts. At either end of the table, resting on mirrors, were handsome vases, containing long-stemmed hybrid roses. The mirrors were festooned with asparagus tenuissimus, interspersed with loose roses. In the corners of the room and in the windows were groups of palms, crotons, caladiums and some plants in bloom. The four handsome sideboards were suitably decorated with the choicest foliage and flowering plants, and the mantel was a solid bank of roses.

"The East Room and the Red and Green Parlors were decorated in the style usual at receptions and state dinners. The East Room presented a particularly grand appearance with its groupings of tropical plants, masses of exotics and brilliant illuminations. Festoons of smilax were gracefully suspended from the large chandeliers, and beautiful garlands ornamented the four pillars, upon each of which was conspicuously displayed a large floral shield composed of choice white and red roses, violets, chrysanthemums, etc., representing the national colors. To the usual decorations of the main corridor were added four astra groups of palms and foliage and flowering plants."

CHRYSANTHEMUMS FOR EXHIBITION.—About the middle or end of May they are ready for their final shift. I find 9-inch pots the most suitable; a few of the strongest I put into 10-inch and the weakest into 8-inch, the latter being potted in June. The soil I use for this potting is light fibrous loam cut during the previous winter and stacked. I spread on each layer of loam a layer of fresh cow-dung and a sprinkling of bone-meal, using a barrowload of cow-dung to four of loam, and a 6-inch potful of bone-meal to a barrowload. Should the loam be heavy I would use fresh horse-droppings and a good sprinkling of wood ashes

instead of cow-manure. This soil is chopped down and pulled to pieces, picking out worms, and with a 5-inch potful of soot to each barrowload, it is then ready for use. The pots must be carefully drained, using, if to be had, half-inch bones or broken oyster shells for the top layer. In this potting the soil should be made very firm, and space left for a liberal top-dressing. Put a stake to each plant, and if possible choose a place where they will get the full benefit of the sun, and be sheltered from the wind. Plunge the pots about three parts of the way up in ashes in rows 3 or 4 feet apart and $1\frac{1}{2}$ or 2 feet apart in the row, the greater distance being the best if room can be had. In June the plants generally make their first breaks. Select the three or four strongest and rub out the rest. The shoots that are left should be allowed to grow unchecked, and in about eight or nine weeks after they will set their crown-bud, which, providing it does not come too early, will make the exhibition flower. Should it appear before the 12th of August pinch it out and rub out all the shoots except one—this will grow for three or four weeks, when another will set again. Buds that set late in August or very early in September come about right for exhibition.

Early in August top-dress the plants with equal parts of loam and horse-droppings prepared as for a mushroom bed with a liberal addition of soot, and repeat the dressing in about six weeks' time, and in a week or so afterwards commence feeding with liquid manure in a very weak state.

As soon as the buds are set, rub out the small shoots clustered around it, and keep those and all below it, rubbed out, so as to throw the strength of the plants into the bud, which, by the way, is usually insignificant looking at first. Gradually increase the frequency of the application of the manure-water, until it may be used at every other watering, but always using it weak. A good way to prepare manure-water is to put cow or sheep manure, or both, in a coarse sack with soot, and then put the sack into a tub or tank of water, and stir it about, renewing it every fortnight. This diluted state used alternately with house-sewage suits them well, until they show color freely, when it must be gradually discontinued, and when the blooms are about three-parts expanded it may be left off. It may be reckoned that it takes a full month from the time the color of the first petals is seen to finish a good solid flower. They should be taken indoors late in September, or early in October, out of danger from frost. An early peach-house or viney suits them very well, as by that

time nearly all the leaves are off the trees. Put them well up to the glass, allowing them as much room as possible with a free admission of air night and day, always guarding against frost and heavy fog. During bright weather, when half or more open, the petals of some of the incurved are apt to reflex or turn back. When they do this the flowers should be shaded from the bright sun.—*Gardeners' Chronicle.*

SCRAPS AND QUERIES.

LINSEED OIL AND ROSE MILDEW.—A correspondent says: "In the GARDENERS' MONTHLY, No. 319, July, 1885, there was a remedy for rose mildew. It was linseed oil and sulphur. Will you please tell me how it must be used?"

[Sulphur is mixed with linseed oil, and the hot-water pipes painted with the mixture.—Ed. G. M.]

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

It is well to remember that the great bulk of garden fruits are natives of temperate climes, or of altitudes that have cool soil and climate. Hence, it is the long summers, dry atmosphere and over-heated soil that enervate the constitutions of our fruit and lead varieties to "run out," as it is called, and not that there is any innate law that prescribes a fixed limit of years for the existence of a variety, as was believed about the beginning of the century. To be successful with our fruits, especially in the warmer States of our Union, it is essential that we study to keep the soil in summer as cool as possible, and that we plant the trees where they will be the least exposed to a hot, drying atmosphere. All our systems of culture must have an eye to these matters. Even summer pruning has to be considered from this stand-point. While the European teacher summer-prunes in order to let in the light and the air, we need not summer-prune for this reason. We have all the light and air we need. We only summer-prune in order to prevent branches growing where they are not needed, or to throw the force of the sap into branches that need this additional strength.

Summer-pruning in this judicious way is a very important art to those garden lovers who wish to excel in fine fruits. It is also well to remember that letting in the light and air, by thinning out leaves, spoils the color of fruits as a general thing. The apple that ripens in sunshine, or at least in light, has a rosier or brighter tint than one that ripens in the shade of the branches; but this is not by the sacrifice of foliage. The absence of

leaves in the shadier part of the tree has much to do—though not all—with the color of fruits. If we cut off the leaves of the exposed branches the apples will not color, no matter how much exposed. Indeed, the coloring of fruits is rather a vital, instead of a chemical process in which light is involved.

These facts are noted here because it is not uncommon to find people taking off the leaves of the grape in order that the sun may color the fruit. Grapes color better under the shade of good healthy foliage than when that foliage is removed.

In the vegetable garden it is of great importance to know the native country and native conditions of those we wish to grow. Those from temperate climates grow well only in spring and fall. They become diseased, usually by mildew, during our long, dry and warm summer days. Those fond of peas, fresh from the vine, may soon sow a few if an autumn crop is desirable.

The lettuce is another cool country plant. It can only be grown well in hot weather when in very rich and cool soil. For winter use, beets are occasionally sown now, and also cucumbers for pickling purposes; but not often; and, at any rate, it must be attended to early in the month. Tomatoes trained to stakes give the sweetest fruit, and remain in bearing the longest; but many cultivators, who grow for size and quantity only, believe they have the best results when growing them on the level ground. Celery is the chief crop requiring attention. The great point is to get short thick-growing varieties, as the long kinds require so much more labor to blanch. There are now a number of new candidates, and people

will try these varieties as they try new fruits. After so many trials with different ways of growing them, those who have their own gardens—amateurs, for whom we write—find that the old plan of sinking the plants in shallow pits is about the best. Trenches are dug about six inches deep, and three or four inches of manure then dug in, of which cow-manure is the best. They can be watered better this way in dry weather, when in these trenches, and it is so much easier to fill the earth about them for blanching purposes than when grown on the level surface. Soap-suds, as well as salt in moderate doses, is usually a wonderful special fertilizer for the celery plant.

Late cabbage is often planted in gardens between rows of potatoes, where it is an object to save space. Some fancy that the cabbage is better preserved in this way from the cabbage-fly, which, they say, prefers the potato; but on this point we are not sure. We do not think the cabbage does quite as well as when it has the whole ground to itself; but of course a double crop could not be expected to be quite so fine.

COMMUNICATIONS.

MILDEW AND ROT IN GRAPES.

BY NORMAN J. COLMAN, U. S. COMMISSIONER OF AGRICULTURE.

1. Dissolve in 10 gallons of water five pounds of sulphate of copper. Soak the stakes and whatever may be used to tie up the vines, in this solution, and, as soon as the leaves are fully formed, thoroughly spray them with the solution, using for this purpose any fine spraying apparatus. The "cyclone nozzle" with fine aperture, described and illustrated in Riley's Report as Entomologist for 1883, is probably the best device for this purpose. Repeat the operation occasionally, say once in two or three weeks.

2. Make a mixture of lime and water as one ordinarily prepares white-wash. Apply this in the same manner as No. 1, using a nozzle with a larger aperture. After rains the application should be renewed.

3. In 22 gallons of water dissolve 18 pounds of sulphate of copper; in another vessel mix 34 pounds of lime with 6 or 7 gallons of water. Pour the lime mixture into the copper solution. Mix thoroughly and the compound is ready for use. Placed in conveniently sized buckets it may be carried through the rows of the vineyard and applied to the leaves by the aid of brooms or wisps made

of slender twigs, dipped into the compound and then switched right and left so as to spray the foliage.

This remedy is very highly recommended. It is not necessary to entirely cover the leaves. Care must be taken not to get any of the compound on the berries.

4. The powder of Mr. Poudechard. This powder contains the following ingredients in the proportions given: 22½ lbs. of air slacked lime; 45 lbs. sulphate of copper; 20 lbs. sulphur (powdered); 30 lbs. ashes (unleached); 15 galls. of water.

These ingredients are compounded as follows: Dissolve the sulphate of copper in the water; when thoroughly dissolved, pour the solution upon the lime which is surrounded by the ashes to keep the liquor from spreading; after 24 hours add the sulphur, thoroughly mix the compound, ashes and all, and sift through a sieve with meshes of $\frac{1}{8}$ of an inch. This preparation may be made several months before it is required for use. Its application is made simply by dusting it upon the foliage of the vines after a heavy dew or rain with any spraying or dusting device; that figured and described in the Report of the Entomologist for 1883, being well adapted to this purpose. The convenience of application renders this powder especially well suited for use in the larger vineyards.

5. The ordinary milk-kerosene emulsion (see report of U. S. Entomologist, 1884, p. 331,) with the addition of from 2 to 5 per cent. of carbolic acid and the same percentage of glycerine and then diluted in 20 to 50 parts of water to one of the emulsion. Spray on the under surface of the leaves by means of a cyclone nozzle of small aperture. This is known in France, where its use has been attended with satisfactory results, as the "Riley Process"—having first been proposed by Dr. C. V. Riley.

The free application of the sulphate of copper and lime appears not only to act as a preventive against mildew, but black rot also. As a further protection against the latter disease it is recommended that Poudechard's Powder be scattered over the grounds in the vineyard, especially where all the trimmings and fallen grapes and leaves of the previous year have not been removed.

Washington, D. C.

[These excellent suggestions have been sent to us by Commissioner Colman, with the request that those trying them will report to the Department, so that the one found the most effectual be generally recommended.—Ed. G. M.]

EDITORIAL NOTES.

GRAPE MILDEW AND GRAPE ROT.—Col. Colman is desirous of getting all the information possible about these diseases, and has issued a circular of questions which he desires answered. Grape growers have a vital interest in these questions, and would do well to send for blanks. Referring to these troubles, the Commissioner says:

"Two very different kinds of mildew are known to be injurious to the vine. One, the least injurious but most conspicuous of the two, grows abundantly upon the upper surface of the leaf and is prevalent in dry seasons; the other is to be found chiefly on the under surface of the leaf and its development is favored by moisture. The first is named the powdery mildew, the second the downy mildew of the grape-vine. The one is *Uncinula spiralis*, the second is *Peronospora viticola*.

"It has been shown that what is generally known as 'The Grape Rot' may arise from very distinct causes. 1st. From insects. 2nd. From the downy grape-vine mildew. 3d. From a fungus named *Phoma uvicola*. The last produces the disease now specifically recognized as 'The Black Rot.' It appears during the latter part of June or in July, usually after protracted rains, fogs or heavy dews succeeded by hot weather. The first manifestation of the disease is a brown spot with a dark central point upon the half grown or nearly matured berries. This spot increases in size and intensity of color, and soon minute, shining pimples or pustules begin to protrude above the epidermis, finally the whole berry, still adhering to the vine, shrivels and dries up, turns to an intense bluish-black color, while the entire surface is roughened with the little pustules above mentioned, in which are imbedded the spore-forming sacs of the *Phoma*."

NEWTOWN PIPPIN APPLES.—These seem to be still grown to great perfection somewhere in America, for the Londoners were boasting, on the 1st of May, with being still supplied with glorious fruit of this variety.

GLOUT MORCEAU PEAR.—How much climate or locality has to do with success with different varieties is evidenced by the fact that though it does well hardly anywhere in America, it is the leading and popular variety at the Cape of Good Hope in southern Africa.

APPLE, DR. JULES' GAUDY.—As a general rule apples raised in our own country are better than those of foreign origin. But not always. Some of our most popular kinds are European; and then the varieties are so numerous we seem to need no more to choose from, either of European or American origin. But this new one is very tempting, and those who are importing new kinds to try might introduce it.

It is about four inches long by three and three-quarters wide, and of the most lovely scarlet red and yellow imaginable. It was raised, says the *Bulletin d'Arboriculture et de Floriculture*, by M. J. Hermans, of Herenthals, Belgium.

THE BARK SCALES.—Prof. A. J. Cook says of these insects that are so troublesome to the fruit grower:

"Parasites, mites and lady beetles all prey upon these fell destroyers, but though efficient aids, they are not always enough to exterminate the lice, and then the trees fall victims to these ruthless suckers. I have seen trees in all parts of our State thus enfeebled or destroyed.

"The old remedy, soft soap, or a strong solution of the same, will surely vanquish this enemy if it is applied in early June and again three weeks later. I have proved the efficacy of this treatment over and over again. The trees at once put on new vigor, and in a short time only dead lice could be found. To apply this specific I know of no better way than to use a cloth and scrub by hand. To be sure, we can, if dainty, use a brush like a shoe brush, but I like to go at it with a good cloth, when, with sleeves rolled up, I make pretty sure that no louse escapes.

"For the past few years I have changed the substance by adding crude carbolic acid, which I think improves it, especially if but one application is to be made; and we know that at this busy season the second application is apt to be neglected.

"I heat to the boiling point one quart of soft soap to two gallons of water, and while still hot thoroughly stir in one pint of crude carbolic acid. This may be applied as before. This carbolic acid mixture retains its virtue, I think, longer than does the soap alone, and so is especially desirable when but one application is to be made, as described above.

"Like the arsenites, so this carbolic acid and soap mixture is of triple value. Not only does it kill the dreaded lice but it also keeps off the borers, which are also serious pests in the orchards of Michigan. The old borers, *Saperda candida*, and *S. cretata*, are quite common and destructive in our State, while the big-headed borer, *Chrysobothris femorata*, is even more prevalent and harmful. I have demonstrated beyond question that these enemies are surely kept away by the same treatment, applied at the same time for which we use it to ward off the scale lice. No wonder, then, that our trees put on such new life and vigor after this annual scrubbing."

THE STRAWBERRY SEASON IN PHILADELPHIA.—Strawberries in considerable abundance appeared from the South about the first of April. They were chiefly Albany seedling, and only average samples of this old kind. On the 1st of June the fruit growers of the vicinity of the city began to bring in their crops. It was very interesting to note the differences in prices. While the

Southern "berries" were rather dull at 6 cents a quart, wholesale, the finer home products found ready sale at 20 to 25 cents. The best articles are the most profitable.

CONSUMPTION OF WINE.—Notwithstanding the efforts of people on the one hand to decrease the consumption of alcoholic liquors, efforts on the other hand, seem to increase. A speaker at a recent convention detailed his efforts to induce the inhabitants of the village of Cordelia in California, to abandon the use of tea, coffee, and other beverages, and substitute wine. He had been so successful that of the sixty heads of families composing the village the use of these items had been abandoned, and that he had sold to these people for use in their families the enormous amount of three hundred gallons of wine per month. The monthly profit on this transaction, to the wine company which the speaker represented was \$90.

ITALIAN WINES.—Though Italy is a huge grape-growing country, its people have little idea of business, and hence it is sent to the French to work up, and send over the world. Nearly six thousand million gallons—so say the figures—are sent every year from Italy to France, for their commercial men to handle.

PECULIAR FERTILIZERS.—An exchange says:

"A peculiar fertilizer for potato fields has been introduced on a Pomeranian model farm. Hitherto herrings and potatoes have been known as a palatable dish in family households. The manager of the farm in question has hit upon the idea of blending them from the start, by planting his seed potatoes with a herring placed in every heap, and with so decided a success as to cause him to increase the area thus planted from twenty acres last year to sixty in the present one. The expense he calculates at about nine marks (about \$2.25) per acre, which is cheaper than the cost of any other kind of manure, and amply repays the outlay. As a matter of course it can only be employed near the sea coast."

It would not do to plant a herring in a corn hill in America. Every dog within twenty miles would be off with one in his mouth before the planting was twenty-four hours old.

TOMATO SOUP FOR THE SICK.—Dr. Horatio Wood, who stands among the leading physicians of Philadelphia, and well known as the discoverer of the active cause of diphtheria, gives the following formula for a tomato soup suited to sick persons:

"A very elegant and cheap soup, suitable to many cases of invalids, can be made according to the following recipe. Of course, if vegetable

juices are contraindicated, this tomato soup is not to be employed:

"Take three quarts of tomatoes, canned or whole, and boil them until they are soft; then strain through a colander, afterwards through a flour-sieve, and reject the solid portions. Boil three pints of milk, thicken it with three tablespoonfuls of flour, then boil the liquid part of the tomatoes over again, and then stir this boiling liquid into the milk; put in a little butter; salt to taste."

HOP CULTURE.—In the famous hop gardens in England they find that the best yield of hops are not when the vines grow in a wholly perpendicular direction. They have had a fashion of running strings from the top of the poles, and along these strings the best hops have been gathered. A later plan is simply to slant the poles, and this plan has been found so good that it is coming into general use.

FLORIDA TOMATOES.—Very good tomatoes met with ready sale in Philadelphia on the first of June at from \$3 to \$3.50 per box of 24 quarts, wholesale.

VIRGINIA CABBAGE.—Chiefly from Norfolk, wholesaled on the first of June in Philadelphia at from 75 cents to \$1.25 a barrel.

USES OF ONIONS.—A lover of the tearful bulb has been giving the *Gardeners' Chronicle* some notes of his favorite, from which we give the following specimen:

"Big onions stew and bake well, and if served up with condiments and melted butter they are not to be cried over, and certainly may not be sneezed at. There is a proverbial fondness for sage and onions, if only stuffed into the body of a certain carcase of bone and skin called goose, and thence done to a turn by proper roasting and basting with fat. A popular error is that sage and onions constitute stuffing or flavoring for the goose; real experience shows that the goose simply helps to flavor the stuffing, which is after all about the only edible portion of the roast. Onions sliced and fried with calf's liver or other strong meats need the stomach of an ogre to thoroughly render justice to. Still, if this be so there must be many ogres walking our earth, for the dish after all finds high favor in many quarters. To descend to plain matter of fact, the onion is really most favored as a flavoring vegetable, whether in soups, broths, stuffing, stews, or other food compounds, and in many and various ways is so largely employed that it is in great request and forms an important and, we trust, a very profitable article of commerce. Even yet there remains one very favorite use for onions, and that is as picklers. Only those familiar with the trade are aware of the immense quantity that is in this country annually grown for this special purpose. Pickled in salt they are afterwards scalded with boiling vinegar flavored with spices and then bottled for home

and foreign consumption. Pickled onions proverbially assist the English husband to dine or sup sumptuously upon his national dish—cold mutton. This description of meat forms our staple article at the dinner-table, and for that reason there is ever an abundance of it cold in the larder. English cookery is of so crude a kind that we know of but one later method of serving up the mutton warm, and that is in the form of hash—literally a hash; and as that may, indeed does, become somewhat monotonous to both bachelors and benedicts, and to serve the mutton up cold is so simple and easy, the welcome pickled onion helps to give to the otherwise dry and non-tempting meat a savory adjunct. Hence the enormous consumption of pickles in this country."

THE CODLING MOTH.—This is the insect that gives us wormy apples. It is the greatest foe of the apple grower. Professor Cook, of Lansing, says the method of placing bandages round the stems to allure the "worms" to take shelter while they undergo transformation, "signally failed," because he could not find any one "right in the busy season" to kill the creatures in the bandages at intervals of ten or fifteen days. He prefers hogs in the orchard to eat the wormy apples; helping the wormy apples to fall with a forked stick. The better protection is, he finds, in spraying with London purple. It is dangerous after May or June, and only when the fruit is of the size of a small pea. It destroys other noxious insects as well. After six years practice he says:

"The danger from this practice I have proved to be nothing at all. The microscope and chemical analysis have both shown that all the poison has been removed long before we wish to eat the fruit. The wind no less than the rain helps to effect this removal, as I have shown by putting the poison on plants sheltered from all rains. Of course we should not turn stock into an orchard till a heavy rain has washed the poison from all herbage under the trees.

"I am entirely positive that a knowledge and practice of this remedy throughout our country will save hundreds of thousands of dollars to our fruit growers. It will serve to give us the fair, perfect apples known to our fathers, but which have become lamentably scarce in our modern orchards."

DESTRUCTION OF THE CABBAGE WORM.—The GARDENERS' MONTHLY has always contended that very much may be done by the hand in the destruction of insects, to much better advantage in many cases, than by the numerous remedies that aim to destroy them all at one fell swoop. We have come to understand this very well in regard to the Plum curculio, which we now shake off; and the bag worm, which a boy gathers from the evergreens, and does for. We are therefore pre-

pared to admire the following which we find in the correspondence of the *American Garden*:

"But the true method for disposing of this cabbage destructive is to catch the butterflies with a net attached to a wire hoop two feet in diameter, with a stale six or seven feet long. With such an instrument a boy eight or ten years old can protect a field of an acre or more. The catching them must be general, and operations must begin with the appearance of the butterflies in the spring, which cuts off the ancestry for the large progeny in July and August. Growers can afford to employ boys for the purpose and then the crop is sure to be of merchantable condition and quality."

CURING TOBACCO.—Very few of the thousands who use tobacco have any idea how much care and skill is required to bring even a "weed" like this to the proper standard of excellence. The *Gardeners' Chronicle* tells how it is done:

"It is recommended that the plants when cut should be allowed to lie an hour or two on the ground, when the leaves will become wilted and drooping, as this will be found convenient when the next process, that of hanging them up, is performed. For this purpose a wall nail is driven into the stem, near and at right angles to the base of it, thus forming a kind of hook, whereby each plant may be hung to a number of stretched wires, cords or other supports, in such a place as a large vinery. Here the leaves will soon begin gradually to assume the rich brown color proper to the commercial article. The lamina or blade will change first, and subsequently, the midrib and larger veins; but until these last become perfectly dry this part of the process cannot be considered finished, for if in the stripping and packing an imperfectly dried stalk is included, mouldiness will assuredly set in and injure the sample. The footstalk, if properly dry, should be sufficiently brittle to be snapped in two on a hot day. The eye, however, and touch will soon become sufficiently practiced to judge when the leaf has attained this state.

"The leaves must now be stripped from the stalks, damped, and tied into bundles of a dozen or more of leaves, by string towards the base of the footstalk. These bundles, when flattened out, will take a fan-shaped form, and are then technically called "hands." The damping process may be done in various ways and should precede bundle making, to avoid loss and disfigurement owing to brittleness. Sprinkling with water is dangerous, for if a leaf be packed actually wet, mouldiness is likely to be the result. Some hours in a damp cellar, or even out-of-doors when there is no fear of rain, may suffice, as the leaf is exceedingly hygrometric and sensitive to a moist atmosphere. The bundles are now packed symmetrically in boxes or between boards, and heavily weighted.

"The packed material should remain for some months under shelter and in a moderately warm temperature, such as may be afforded by a room in the dwelling-house, or in the same glass structure

in which the drying process was effected, but a really damp atmosphere will now be detrimental.

"A species of slow fermentation succeeds, analogous to that of hay in the rick, and until this has worked itself out, the tobacco is not fit for use, in fact it is not proper tobacco at all."

SCRAPS AND QUERIES.

FORCED PEACHES.—"J. F. C." sends us some samples of Alexander peaches, forced under glass, ripe on June 1st. Very good for Pennsylvania. But the chief interest is the size of this variety when forced, weighing $3\frac{1}{4}$ ounces, and the very superior quality. Usually, forced peaches are not thought as good as open air fruit; but these were truly delicious, and would probably stop the mouth of one praising even the much worshipped strawberries.

THE NEVADA EVERGREEN BLACKBERRY.—Mrs. Fanny E. Briggs, writing from Washington Territory, remarks: "I have been observing the Evergreen blackberry quite closely for the past two winters. The leaves on the old wood—that which has borne fruit—die in the fall, while those on the new growth remain fresh all winter, no matter how much exposed, and begin to die in the spring, when new growth begins. Now (May 9th) some are dead, some still fresh, on an exposed trellis, where the new shoots are 6 inches long."

[This leaf confirms what has been before noted in our magazine, that the so-called "Nevada" Evergreen blackberry is not a "Nevada" plant, but the ordinary and well-known garden plant, the cut-leaved variety of the commonest of English blackberries—*Rubus fruticosus*, or *Rubus discolor* of some authors. This species is a sub-evergreen.—Ed. G. M.]

FORESTRY.

EDITORIAL NOTES.

GROWTH OF THE WHITE PINE.—A Canadian correspondent sends us the following from a local paper, and asks if we can supply the information desired:

"Within our own Dominion many varieties of useful lumber are nearly extinct, and others rapidly becoming so. The white pine is one of these, and it is about it that a little information is required from some of our readers.

"A gentleman in this city has received a communication from the United States Department of Agriculture, requesting some information about this noble tree. It is impossible to get any information on anything connected with forestry in any of our government departments, there being none there, so we ask any of our readers who may have any knowledge of the habits of this tree to communicate with the *Capital*.

"The information desired has principally to do with the growth of the tree, its size, at a specified age, four and a half feet from the ground, and the kind of soil in which it flourishes.

"For instance, a tree being taken for observation, it is desired to know whether it is natural, planted, or seedling growth; also its diameter four and a half feet above ground, its height, age, and vigor. It is also desired to know something of the surroundings, and the aspect and configuration of the district in which the tree has grown."

[A tree recently cut down near Philadelphia, was 23 years old, had been twice transplanted, once when three years old and once when ten years old, when it was left to grow in ordinarily good farm land composed of a slightly sandy clay, at an elevation of about 300 feet above tide water. It was 40 feet high, and 11 inches thick. This is an average height of 20 inches, and an increase of half an inch in thickness, yearly. Other trees were growing near all this time, but not so close as to do more than barely touch by the lower branches when it was cut down. This may be taken as a fair average growth for the White Pine under any and all circumstances. When the seed is sown, anyhow, and the trees suffered to struggle, anyhow—or left with underbrush to struggle with the trees for some of the food the tree ought to have,—or if the tree be planted in soil "too rocky or too poor to be of any other use but for timber planting," as is so often recommended for tree planters to choose, it would be much longer. We may safely put it down for a fact that a hundred acres of White Pine set about 12 or 14 feet apart on good farming ground, cultivated the first few years with corn or potatoes if desirable, the chief object being to make the ground pay for keeping down the weeds, would

give in 25 years, 25,000 or 30,000 logs three feet in circumference. In 50 years of good forest culture after the great forest famine of which we hear so much shall have arrived, we can have the country reforested with logs six feet in circumference.

It would pay to start it now; pay any individual speculator as an investment, if there were any foundation for the near scarcity so often foretold. A company that would plant a thousand acres knowing that it would be worth a gold mine at 50 years, could always sell its shares to advantage with every year of approach towards that fiftieth year. The only reason it is not done now is because no one who has money to invest believes in the statements made about the absolute scarcity at the end of the half century.—Ed. G. M.]

AGES OF TREES.—The Philadelphia *Public Ledger* says:

"As the great ages attributed to men have been doubted, and with good reason in many cases, it is not surprising to find the Prussian chief forester denying that trees grow to be a thousand years old. His researches put the extreme age of the pine at 570 years; of the larch at 429, the oak 410, and the red beech 245. There is a linden tree in Wurtemberg which is shown by local chronicles to be at least 438 years old, for in 1448 it was so old that it had to have its branches propped up. Seven horizontal branches are now sustained by stone columns, but the trunk is a mere shell, supported by internal as well as external masonry. It is said that the pine tree, although it reaches the greatest age in a sound condition, decays more rapidly when its decline sets in. The oak and some other trees continue to vegetate when reduced to mere shells."

This is what the GARDENERS' MONTHLY has been contending for in connection with American forestry, where trees have a less tenure of life than in the more favorable climates of Europe. There are in America, as well as in the Old World, indi-

vidual cases of trees, as well as of human beings, going on to a great age; but when we are asked for the average duration of life in the trees of the American forest, we may give in round numbers two hundred years as about the figure. For this reason the efforts that are being continually made for the preservation of our old forests, should be transferred to the planting of new ones.

FOREST PLANTING.—It is a pleasure to note that the views of the GARDENERS' MONTHLY in regard to forest planting, are rapidly gaining ground. Our old forests, with their wealth of fire-inviting underbrush, are not worth preserving. What we want forest associations for is not to save brands from the burning that are predestined to burn, but to encourage the planting and growth of new forests, and to save reckless waste of good material, when it is really being recklessly dealt with. An able article in the *Germantown Telegraph*, of this tenor, suggests this paragraph.

SCRAPS AND QUERIES.

ARBOR VITÆ FOR HOP POLES.—"L. J. C.," Wolcott, N. Y., writes: "Would you advise me to plant cedar for hop poles? The nurserymen here tell me that cedar trees will grow in seven years up to about 2 inches in diameter at the butt. Do you think it would pay as an investment? They are paying as high as fifteen cents each for a 3-inch hop pole in New York State. On account of the scarcity of timber the price is advancing all the time."

[By cedar the American Arbor Vitæ is to be understood, and no doubt it would make the best of all tolerably fast-growing plants for the purpose desired—and that it would grow to the size named within the time specified.—Ed. G. M.]

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

FRIENDLY LADY-BUGS.

BY PROF. S. S. RATHVON.

The inclosed "slip" was sent to me by some person unknown, mailed at Virginia City, Nevada, March, 1886, without note or comment. I have

known the insect referred to for forty years at least in this county and other parts of Pennsylvania, but never saw it abundant, except upon one occasion; but a few are present here and there every summer.

The occasion I refer to occurred about thirty years ago, when the silver maple, linden, grape-vines, etc., were severely infested by a scale in-

sect, known as the "Maple cotton scale," (*Pulvinaria innumerabilis*). A maple tree then standing—and still standing—immediately in front of my own door, on N. Queen street, had a multitude of the scales upon it, mainly attached to the undersides of the smaller branches and the leaves. There were also present in abundance the *Chilochorus bivulnerus*—the larva, the pupa and the imago—but it did not require a microscope to detect them slaughtering the "scale." They belong to the family *Coccinellidae*, or lady-birds: very convexed; shining black color, with a large blood-red spot on each wing-cover, and the largest specimens are fully a quarter of an inch long. They underwent their transformations in groups of ten or twenty, on the trunks of the trees. From the fact that they were obtained in Florida, in the case referred to, taken to San Diego, California, and from thence to Nevada, and also that they have been long known in Pennsylvania, New York, Canada, Missouri and other Western States, their cosmopolitan character may be approximated. The following year my maple tree had very few of the scale insects on it, and none of the lady-birds that I could discover.

The fact is, they are ravenous feeders, and I presume only visit such places in great number where there exists a redundancy of food. I noticed this phenomena also some years ago when our oat fields were infested by the "oat-aphis," (*Aphis avena*). Half a dozen species of *Coccinellan* were also present in very large numbers, and both the imago and the larva continued their slaughter from morning until night, and the year following there were but few "oat-aphis." I have thought these facts may be of some importance to those concerned, and hence ought to be widely extended.

"Last Saturday, says the Fresno *Expositor*, Mr. J. H. Sewell, of the Central Colony, received a small lot of bugs from his son-in-law, William B. Atwater, of National City, San Diego county. The first of these species were imported to San Diego from Florida, and turned loose to prey upon the scale insects infesting an orange orchard near that city. They proved such prolific breeders and waged such incessant war upon the scale as to almost completely rid a ten-acre orchard of the presence of that much dreaded pest in a single season. Mr. Sewell's daughter wrote to him inquiring in regard to the prevalence of scale in his orchard near this city, and suggested the introduction of these little parasites as an infallible remedy. The bugs Mr. Sewell received came by mail in a little tin cap box, and he immediately placed them on a peach tree upon which the scale was quite noticeable. He watched their movements

with a magnifying glass, and says that it was surprising to see the little bug-ers get down to work at once. No injurious effect has been noticed either to trees or fruit where they have been employed at San Diego, and it is confidently claimed that the mission of these little bugs is simply to prey upon and destroy the pests that now assail the orchards of California.

"The Secretary of the Board of Horticultural Commissioners visited Mr. Sewell's place on Wednesday and reports as follows: The scale destroyer in the orchard of Mr. Sewell in Central Colony, is one of the ravenous species of lady bug—all ravenous destroyers of the scale insect. It is the "twice stabbed" species, or *Chilochorus bivulnerus*, and is able to keep at a good square meal all day long when the sun shines warm. Its larvæ is also a voracious eater. It does not eat vegetable matter, but in addition to the scale also devours all species of aphids, and bark lice of every description. It is a most useful insect, and has done great good in many regions where it abounds, and we are glad of its introduction here. An inspection shows that he has gone to work, is very much at home, and is growing fat. We should like to see him multiplied several myriads in our orchards, and hope our glorious climate and prolific soil will increase his appetite and productions a thousand fold."

Lancaster, Pa.

[It may be of some interest to note that "when we were boys," these useful and beautiful little creatures were known as "Lady birds." It is pleasant to remember how "we children" used to get them on a straw and invoke, "Lady bird, lady bird, fly away home, your house is on fire," &c., by which time the creature, having reached the top of the straw, was to our great pleasure, ready to obey the summons. But the solemn visaged man of science has insisted that it is not "a bird" but quite another thing, and that we must say "Lady-bug." But they are not to have it wholly their own way, for Prof. Riley insists that it is not a bug but a "beetle."

"Us boys" are glad to see the Professors at loggerheads; but unfortunately "Lady beetle, lady beetle," will not work well into our old rhyme; and moreover, as boys will be boys, we don't like to have the dear "Ladies" associated in our minds with bugs, beetles, and all such nasty things. If not "birds," and they are to be associated with anything that has wings, let it be the angels.—Ed. G. M.]

A YELLOW ZEPHYRANTHES.

BY W. E. ENDICOTT.

You have published many interesting paragraphs, during the past year, upon the genus *Zephyranthes*; and one of the points debated has been the existence of a yellow species. I have now in blossom a species received under the name

of *Z. sulphurea* which is chestnut colored externally and deep chrome-yellow inside. I crossed it last year with *Z. Treatiae*, making the latter the seed-parent and have at present, seedlings of the two species and of the hybrid, and all three are easily distinguishable from each other by the foliage. Of course, the hybrid has not yet blossomed.

On plate 6605 of the *Botanical Magazine* is figured a bright yellow species, *Z. citrina*; and the accompanying text mentions still a third species of the same color.

As to the generic name, I may add that the highest court of appeal, the *Genera Plantarum*, excludes from the genus *Amaryllis* everything except *A. Belladonna*, restoring to the plants under discussion their former name, *Zephyranthes*.
Canton, Mass.

THE ONION CUT-WORM.

BY PROF. C. V. RILEY.

The dark-sided cut-worm, (*Agrotis messoria*, Harr.), order Lepidoptera, family Noctuidæ, has formed a new habit.

This insect was treated of in our last annual report (p. 290) under the general head of Cabbage Cut-worms, and is here refigured and mentioned because of its appearance the past summer in enormous numbers in the onion fields of Orange county, New York.

Our first intimation of the existence of this pest was through letter and specimens received June 11th, from Hon. G. W. Greene, of Goshen, in which he stated that the worm was destroying the onion crop in his vicinity and threatened extinction to a large and growing industry. The annual value of the crop in the vicinity of Goshen alone he stated to be half a million dollars.

Mr. John B. Smith, and Mr. Thomas Bennett, a practical gardener of Newark, whom we had engaged for a short time to perform certain practical experiments with insecticides, were sent to Goshen to study the facts and surroundings, and in obedience to a request from Mr. Greene we sent him a letter for publication giving him such knowledge as we then possessed on the subject, and quoting our general recommendations for the destruction of cut-worms, as given in our last annual report (pp. 298-300).

HABITS AND NATURAL HISTORY.

It will be seen from what we stated of this insect in our last annual report (p. 290) that it is a very wide-spread species, occurring from the

Pacific to the Atlantic, as far north as Quebec and as far south as Missouri, and that so far as we then knew, it had the normal habit of the group, *i. e.*, was single-brooded, the moths occurring during July and August, after a duration in the pupa state of a month or more. This account of its natural history was based upon observations made in Illinois and Missouri, and we were much interested in ascertaining whether there would be any departure from these habits in New York, especially in reference to the species being single or double brooded, as much of the efficacy of any practical recommendations would depend upon the local facts.

We therefore made every effort to ascertain the facts in the case, and, on the supposition that there might be a second generation of worms, we had Mr. Smith pay two other visits to Goshen, one early in September and one early in October, with a view of making additional observations. Our office notes show that nearly full-grown larvæ were received from Goshen on June 18th and 26th, from the onion patches, and that additional larvæ were received July 24th and 30th from Trenton, N. J., where they had been feeding on cabbage.

The moths from the first lot of larvæ (from Goshen), issued July 25th, 26th and 29th, while those from the second lot (from Trenton) made their appearance August 11th, 17th, 18th and 28th. A few pupæ, obtained the first week in September, gave out the moths September 8th, 9th and 10th. This corresponds very well with our previous experience, the more northern latitude accounting for the somewhat later appearances in New York than in Illinois and Missouri.

At Goshen all the larvæ had apparently transformed by September 2d, the date of Mr. Smith's second examination. This second visit was undertaken in consequence of a report that a second brood of worms had made its appearance and was damaging the neighboring oat fields; but, as it turned out, this report arose from the presence of the army worm (*Leucania unipuncta*) in the oats. The onions had ripened and were largely gathered, many fields having been replanted in corn, oats or turnips in consequence of the damage done to the onions by the worms. A more careful search through the onion fields showed no traces of the eggs, larvæ or moths, but by digging he found a few pupæ inclosed in earthen cells some 4 inches below the surface of the ground. They were very scarce and he found no empty shells to indicate that they had been more abundant. The probabilities are that a vast majority of

the larvæ fell a prey to *Tachina* flies, the eggs of which were noticed on a very large proportion of the larvæ in June.

A further examination at the beginning of October failed to reveal any traces either of eggs, larvæ, pupæ or moths in the vicinity of the ravaged onion fields, save a few empty pupæ shells in the same locality where the pupæ were found in September. There had been at this time a frost severe enough to form ice, and it is safe to presume that the season for the development of the species had at that time ceased.

From the experience of the year it is evident to our mind that there was no second generation, and that, therefore, the previous observations in the West have been confirmed on this point. Both Mr. Smith's examination and our own office notes are entirely negative in throwing further light on the method of hibernation, and, as we know from our former experience that the full-

habit may be to hibernate in the larva state, exceptional climatic conditions may bring about an exceptional hibernation of the moths. This would seem to have been the case in this instance, more especially as the land in which they occurred has for the last few years been planted to onions season after season. Unless the onion fields were allowed to get quite weedy in the fall (which is not the case) the larvæ could not well develop so as to hibernate in any quantities in the field, and the methods of culture, as well as the condition of the larvæ in June and their absence in October, all point to spring hatching. The worms had not been seen before, and the moths most probably concentrated on the fields in the spring. We have, however, no records of captures of the moths later than September 10th.

We regret not to be able to give a description of the eggs or of the place of oviposition, but it is not at all improbable that they are laid on many different plants or even upon shrubs which the larvæ, on hatching, abandon.

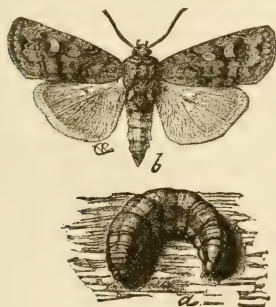
In our last report the subject of remedies for cut-worms was considered in a general way as applying to all of the species there treated of, and in this particular case, the circumstances being more or less peculiar, our general recommendations must be somewhat modified to suit. We have said nothing about the peculiar conditions connected with this Goshen outbreak, nor have we mentioned the remedies tried by the onion-growers, as these are described both by Mr. Smith and Mr. Bennett in their reports, which follow.

We believe that the crop can be grown successfully even in a marked cut-worm season by adopting the following measures:

As a preventive we would treat the land early in spring with a mixture of lime and ashes (preferably wood ashes). This mixture should be spread lightly over the land, after plowing, and harrowed in.

If, after the seed is sown and the plants have begun to come up, the worms still appear and threaten damage, we would employ the poisoned ball system described on pages 299 and 300 of our last annual report. This, in brief, consists in placing along the rows, at a distance of 15 or 20 feet apart, small bunches of fresh cut grass or other green plant (cabbage leaves where available), which have been previously sprinkled with dilute Paris green or London purple. By this means nearly all of the worms can be destroyed with a minimum of trouble.

If, as is very improbable, the worms should still



grown larvæ are found early enough in the season to injure the buds of fruit trees—the best evidence that they have hibernated—and as the larval hibernation is by far the most common among the cut-worms, we are still of the opinion that the species so hibernates as a rule, even in New York State.

This does not, however, preclude the hibernation of some of the later-developed moths, and the fact that neither moths, eggs nor young larvæ were found in October must, we think, be explained on two grounds, (1) either limited and insufficient search, or (2) their occurrence in adjacent localities or on other plants. There are no fixed rules which can always be depended on in the life habits of these insects, as exceptional occurrences, such as this wide spread injury to onions around Goshen, are very probably due to exceptional conditions. Thus, while the normal

appear in great numbers, by migration from surrounding fields, we would sprinkle the fields at night, while the worms are at work, with a dilute emulsion of kerosene. Mr. Smith shows that pure kerosene has been tried at Goshen with the effect of killing the worms and simply blackening, but not killing, the onion tips. We are not satisfied, however, that the free use of pure kerosene would not seriously injure the plants, and we recommend instead an emulsion as being safer and much cheaper, while just as effective in killing the worms. The kerosene is emulsified with soap or milk in order that it may be readily diluted with water. For the proper preparation and application of the emulsion a good force-pump is needed, but beyond this no apparatus is necessary. The best formula for this preparation is that given on page 331 of our last annual report. There is little doubt but that by a thorough spraying of the fields at night with this mixture the worms can be destroyed by wholesale. It should be used most thoroughly at the points in the field where the worms are first noticed to work, and from which they spread to surrounding portions. The first appearance should be watched for with the greatest care, and should be followed by the most energetic efforts to destroy them.

[The above is an abstract of a paper in the recent report of the Entomologist of the Department of Agriculture, and refers to an insect doing an immense amount of injury to the onion growers in the Eastern States.—Ed. G. M.]

THE MISTLETOE: VISCUM ALBUM.

BY C. EISELE.

From time to time I read notices of this plant in the GARDENERS' MONTHLY. I do not understand why this miserable parasite should be so much made of. In Central Europe it is a great curse to the arboriculturist; so much so that in many localities any one who is negligent enough to let it have its own way on his trees (principally apple trees) is subject to a fine, and many a fruit bearing limb is cut off in order to arrest its spreading and destroying other trees, for it will accomplish this if not taken off.

I think the fruit growers should consider themselves lucky that this plant has not made its appearance in this locality; if once about it will spread very rapidly; our birds know how to propagate it faster than any gardener could. *Philadelphia.*

[The American Mistletoe is regarded by botanists as distinct from the European *Viscum album*,

and has received the name of *Phoradendron flavescens*. It would be of interest to know whether it has been observed on fruit trees. The Editor never knew of a case.—Ed. G. M.]

EDITORIAL NOTES.

THE ENGLISH SPARROW.—This terrible nuisance to the fruit raiser and seed-grower is, like Satan, not without an occasional good quality. Prof. Ward thus tells of a slight advance in its moral character:

"One small piece of good work the sparrow did last summer and that was, to practically exterminate the seventeen year locusts which appeared in the parks in the city of Washington. The London sparrows are reputed to read the newspapers, and this ability has probably been inherited by their descendants. Certain it is that immediately after the published declaration of Prof. Riley that Cicadas were edible the best energies of the sparrows were devoted to their destruction. Forsaking the streets they hung about the parks from morning to night snapping up the luckless Cicadas as fast as they appeared. So great was the destruction that the edges of the walks were bright with a sparkling border of Cicada wings and scarcely an insect was left to propagate the race."

MONTBRETIAS.—Coming to the front as rivals of the *Gladiolus*, *Montbretias* hold a prominent place. They are Cape plants, and some of them have been regarded as *gladiolus* in times past. *Ixia*, *Tritonia*, *Freesia*, *Waitzia*, and other genera have also so close a family relationship with *Montbretia*, that different botanists have placed the same plant in different ones of these, and the supposed genera are found to cross with one another. The plant known in collections as *Tritonia aurea* has been intercrossed with *Montbretia*, and a pretty race of hybrids have been developed. *Popular Gardening* for June has an illustration of one of these hybrids, known in catalogues as *Montbretia crocosmiaziflora*.

RAINY SEASONS.—Some people do not reflect that the water which comes down as rain must first go up as vapor, and that, forests or no forests, nothing can come down but what first goes up. The central part of the United States has had much more rain the past spring than ever went up from its surface, but it has drawn on other sections for what was legitimately theirs. Texas and other portions south have suffered severely by drouth, and a correspondent from Lyons, Wis., tells us that in that section the drouth made short work of his strawberry crop.

TRANSPIRATION AND EVAPORATION.—When a clod of earth dries it is said to be through evaporation; when moisture passes away from the surface of the leaf in the regular operation of growth it is called transpiration. In relation to these terms Prof. Bessey says in a recent number of the *American Naturalist*:

"It will puzzle any one to make out a good reason for using two terms for the process of water-loss in plants. We have it said that 'evaporation' is the 'purely physical process,' while the experiments show that what is called 'transpiration' is, after all, a physical process also; and when we are told, as in the last sentence above, that 'life has a retarding effect on evaporation,' the confusion of ideas becomes somewhat embarrassing. Why not use but one term, and that the more general one—evaporation? The fact of modification or control of evaporation is so common a phenomenon in nature that we cannot regard it as of great significance. Common salt or sugar added to water retards evaporation.

"The mutual attraction of the molecules of cellulose and water retards evaporation; so does the mutual attraction of the molecules of protoplasm and water. Heat increases the rate of evaporation, while a reduction of temperature (other things being equal) retards it, etc., etc. Why not call the loss of water in the plant what it is—evaporation, and then discuss the several modifying influences? Certainly such a course would contribute to clearness and accuracy, and would relieve the beginner of one of the difficulties in vegetable physiology."

That living things do evaporate moisture is certain. When a tree freezes dry during the winter, or dries by the excessive warmth of summer, evaporation must be charged with this result. In this case it is simply a physical process, that which is dryer absorbing that which is moister, an effort at equalization. But life—the principle of life whatever it may be, and not merely "molecules" of matter—resists this effort at drying out. A live creature thrown on a spot where it can get no more water, with a dead creature alongside of it, will retain some moisture for weeks or until it thirsts to death. The dead creature soon dries up. On the other hand, a living creature, though in an atmosphere filled with moisture to the saturation point will still "transpire," still have moisture pass away from the surface of its body. Here the action actually opposes the physical laws of evaporation. It seems to us that the two terms serve a useful purpose at times, though their lines do often run together.

MUDDY WATER.—As everybody knows, mud is heavier than water, and when time has been given to muddy water, the mud sinks to the bottom.

But why should mud ever be able to float? The following from the *Independent* shows how heavy bodies may be lifted—but long after they have been lifted, and velocity is no power in the case, mud will swim:

"The power which water has to transport or carry, is not usually appreciated. This power increases as the sixth power of the velocity, so that a stream flowing six times as fast as another will be able to transport 46,656 times more matter. The flowing data are often used by engineers in calculating the scouring effects of water on the bottoms of rivers. Fine clay is hardly affected by a velocity of 3 inches a second. Fine sand is raised by 6 inches per second, while a velocity of 8 inches will raise sand as coarse as linseed. Fine gravel is swept away at 12 inches per second, and 24 inches per second (1½ miles an hour) takes off pebbles about 1 inch in diameter. When the velocity gets up to 36 feet per second, or about 2 miles per hour—and this is about two-thirds the rate of an ordinary walker—pieces of rock as large as an egg are carried off."

THE GAS-PLANT—DICTAMNUS FRAXINELLA.—The *American Agriculturist* notes that any one may note the gas-producing emanations from this plant by lighting a match under it at night. It is one of the most beautiful of hardy herbaceous plants, independently of this interesting character, and easily grown.

SCRAPS AND QUERIES.

CRINUM AMABILE IN FLORIDA.—"E. K. T.," Providence, Bradford Co., Fla., under date of June 3rd, writes: "I send you to-day, by mail, the blooms, stalk, and leaf of a lily which I do not find in florists' catalogues, and suppose it to be entirely new. It is an evergreen and almost a monthly bloomer. The leaves are very large and heavy, and the growth dense, giving it a very tropical appearance. Indeed the plant is as beautiful as its pale pink blooms are. The bulbs are immense; some of them being five and six inches in diameter."

[What a beautiful land Florida must be, with such grand plants as this *Crinum* among its floral adornments. After all there was a serpent in Paradise, and we suppose Florida has its wicked creatures as well as angelic beings.—Ed. G. M.]

ZEPHYRANTHES TREATÆ.—A correspondent says, and we are inclined to agree with the opinion as to the fact, if not to the cause: "I am beginning to think that Mrs. Treat's *Amayllis* was only an especially fine form of *Atamasco*, rendered so by the warm rich mucky soil in which they were

found, and that the kind that wants looking after is the 'rush-leaved' kind that has been sent out as *A. Treatæ*."

RUSSIAN OLIVE.—"B. F.," Lincoln, Neb., says. "Will you please inform an appreciative reader, what is the Russian Olive advertised by some of our nurserymen, as well adapted to our northern climate? I am interested in oil-producing plants. Would it be safe to experiment with these?"

It is well to "experiment" with anything and everything when knowledge is to be gained, and when there is reasonable ground to warrant the experiment.

As to what is the Russian Olive, we have no knowledge. No olive is a native of Russia. It is probably a mere new catchpenny name for some old thing, that would not sell at all under the name it originally bore.

MERTENSIA VIRGINICA.—A Doylestown, Pa., correspondent, writing of a locality about nine miles from there says of the common Lungwort: "Were you ever at Sacketts Ford? If not, try and get there another year early in May, to see the *Mertensia Virginica*—I suppose it is—in bloom. It is perfectly superb, and spreads over about an acre, and with it in great quantity blooming at the same time, is the wild white *Dielytra*."

LIT-CHI.—"F. J. H.," Jacksonville, Ills., writes: "I send by this mail samples of a fruit highly prized as a dessert by the Chinese. It is imported by the barrelful, and is eaten just as it is, which I believe is its natural condition. You will notice the flavor would not suit Americans. It is said to

be a native of the colder parts of China, and I suppose would grow in our country. It is a fruit I had not seen before, and was attracted by its oddity. If you are acquainted with it, I would be pleased to learn the name."

[The Chinese name is given at the head of the paragraph. Its botanical name is *Euphoria Litchi*, or in some works, *Nephelium Lichi*. It belongs to the natural order *Sapindaceæ*, of which the horse-chestnut is a familiar example. It would probably thrive in some parts of our country, but just how much dry atmosphere and low temperature it would withstand, would be matters of experiment. We know of none having been made.—Ed. G. M.]

SEEDLESS ORANGES.—"A. F. J.," Peoria, Ills., writes: "I notice a communication from 'W. C. B.' in the June magazine about seedless oranges, wherein he says that he had 'never seen or heard of one entirely seedless,' and those who examined the orange had never seen one like it.

"It was my good fortune to spend the past winter in Southern California, mid the orange groves and flower gardens of that favored land, where they grow in large quantity a luscious and rich orange called the Navel, entirely seedless and a very delicious fruit; the best ones are probably produced at Riverside; it was one of this variety that 'W. C. B.' perhaps obtained, and not knowing the variety considered it a 'rare specimen.' The trees are produced from buds or by budding and make a handsome tree.

"When 'W. C. B.' wants an orange as is an orange let him get the Southern California Navel."

LITERATURE, TRAVELS AND PERSONAL NOTES.

EDITORIAL NOTES.

AN EARLY AMERICAN BOTANIC GARDEN.—The minutes of the American Philosophical Society, June 19th, 1784, record that a botanic garden should be at once established; that "200 feet of the Arch Street lot next the observatory" should be at once prepared for planting; and "Hopkinson and Rittenhouse" were appointed a committee "to look out for a gardener."

The "observatory" at that time was where the grand public buildings in Philadelphia now stand.

SELLING THE WRONG TREES.—A suit has been commenced in one of the State courts against a prominent nurseryman, for \$2000 damages. Plaintiff alleges that in 1879 he purchased 300 cherry trees from defendant, which were warranted "Early Purple Guigne," an early and choice variety, but that after several years careful culture he has discovered that they are not the kind represented, but some unknown and worthless variety.

The whole issue turns on the question whether the seller did "warrant" the trees true to name, or whether they were taken in the regular way of

the nursery trade, which is understood to be that "every reasonable precaution has been taken to have the articles true to name."

PANSIES.—Ophelia told us that pansies "are for thoughts." The lovely flowers have served for thoughts in many ways. Very pretty thoughts are expressed in the following lines, sent with a basket of these flowers to Frederick Fraley, one of Philadelphia's honored citizens, on entering his eighty-second birthday, by the Rev. Jessy Y. Burk:

"Pansies to 82!

A tribute strange—
But stranger still, such opportunity,
Of most of human kind the heart is dust,
Its tumult stilled, its passions all at rest,
Long ere such venerable years are gained.
Some linger on a vegetative life,
In circles ever wider from the heart,
That slowly dies to all the outer world
And finds inglorious ease in selfishness.
But thou, O friend, in whom the living heart
Is most alive—to thee Heartsease I bring—
A fitting tribute to the peace it holds.
Heartsease in retrospect—these purple hues
A token of the toils and sorrows past,
That only chastened—did not spoil the life;
These sky-like blues, an emblem of to-day,
Serene and calm, when all is well with thee,
And life is fragrant with the autumn fruits
Now ripened to the full; these golden tints
A symbol of the light in that fair land
Not far off now, where fuller heart's ease blooms.
And so I bring

Pansies to 82!"

THE PHILADELPHIA PARK COMMISSION.—The choice of members to the Philadelphia Park Commission is not made elective, because mere politicians and not those acquainted with the business desired might be elected. So the Judges of the courts are given the power to appoint. In the place of the late Hon. John Welsh they have appointed Mr. E. H. Fitler, the well-known wealthy rope manufacturer, and a very able and prominent politician. Mr. F. has never been known to have any taste for, or interest in gardening. He is, however, an excellent gentleman, and so far the selection is acceptable to the people.

PARK FOR WILMINGTON, DEL.—Eighty acres along the beautiful Brandywine, have at last been secured for the people of Wilmington, the ordinance appropriating money for the purchase having passed the city council in the early part of the present month. This has been an object of solicitude with Mr. Wm. M. Canby, the well-known botanist, and an ex-member of the city government, for many years past; and it must be a great comfort to his approaching threescore.

POISON HONEY.—Some correspondents of the *Weekly Press* are worrying its readers about the honey from bees that collect from *Kalmia* flowers, being poisonous. Mr. Williams, of Central Park, is very earnest in cautioning people against this

poison honey, especially that collected from *Kalmia angustifolia*. He does not know of a case of any one being poisoned through eating this honey; but he does know that 2200 years ago 10,000 soldiers are described by Xenophon, as having been poisoned by *Rhododendron* honey, and that in 1704, when Tournefort searched on the spot for *Rhododendrons* he only found azaleas, and that people told him some get mad on azalea honey; and further, that Mr. Abbott wrote in 1838, that he "had witnessed similar effects to that which was produced on Xenophon's army."

All this is very amusing in view of the fact now recognized, that the "*Rhododendron*" of the *Anabasis*, is the oleander of our time! It all goes to show that people can "witness" any thing they are looking for.

THE ONION IN LITERATURE.—At the November meeting of the Summit County (Ohio) Horticultural Society, Mrs. Claypole gave an interesting address on the Onion, from which we make the following extract:

"It is plain by this time that our visitant is possessed with the idea that there must have been a first onion behind all those of which he hears, and that he will give us no rest until we can put it before him and say, 'Behold, here is the native plant which by wise cultivation has developed these handsome bulbs which you see.' Be the search for this first onion then long or short, it seems that we must undertake it. Let us take the first step in the inquiry. Shall we find this native plant, this *Allium cepa*, this parent of all cultivated onions on this continent? No; it has been sought for, but America is not rich in species of *Allium*, and *Allium cepa* is nowhere to be found. Cortez, when relating incidents of his brilliant conquests in Mexico, is reported by Humboldt to have said that he saw onions in the market-place of the ancient Tenochtitlan, and that the Mexicans called these onions *xonacatl*. But careful enquiry shows that the name *xonacatl* does not apply to our cultivated species of *Allium*. In the seventeenth century only one single *Allium* was reported from Jamaica, and that was our species—*Allium cepa*—and it was in the garden with other vegetables from Europe. Acosta, in his 'Natural History of the Indies,' says expressly that the onions of Peru were brought from Europe. To Europe, then, we must go on the track of the first onion. Any European will tell us that onions have always been cultivated there. But aware that our Visitor will inquire into that 'always,' we will see if we can find out what it means, so far as England is concerned.

"Shakespeare mentions the onion. In the 'Midsummer Night's Dream,' Bottom, a weaver, giving final directions to Quince, the carpenter, Flute, the bellows mender, Snout, the tinker, and Starveling, the tailor—all humble folks, who are about to present a play before the Duke and his

party, after telling them to go home and attend to this, that and the other, says:

"And most dear actors eat no onions nor garlic, for we are to utter sweet breath: and I do not doubt but to hear them say it is a sweet comedy."

"When Helena, at the close of 'All's Well that Ends Well,' finds at the same time her husband and her mother, the old Lord Lafen exclaims:

"Mine eyes smell onions; I shall weep anon,
Good Tom Drum, lend me a handkercher; so;
I thank thee; wait on me home, I'll make sport with thee."

"In the introduction to the 'Taming of the Shrew,' the lord, sending instructions to his page to enact the part of wife to the old drunkard whom they are about to befool, says:

"Bid him shed tears,
And if the boy have not a woman's gift
To rain a shower of commanded tears,
An onion will do well for such a shift."

"Enobarbus, comforting Anthony on the death of his wife, Fulvia, says:

"The tears live in an onion that should water this sorrow."

"And later the same Enobarbus exclaims on an occasion when he deems it well to turn the current of pathetic thoughts—

"Look, they weep, and I—am onion-eyed."

"Now, I think it must be conceded that the joke connecting a mere show of grief with the use of an onion is old and well worn—*requiescat in pace*. But let us remember that at the time when the potato was a newcomer into Europe, the onion and its properties were so widely known, and so familiar to all, that Shakespeare could rely on the word to bring—even to the dull brains in the pit—a vivid picture of tears without woe.

"Shall we find our first onion in England? No, its name tells us that it is no native. Onion is merely the English way of pronouncing the French 'oignon,' and by the French, at some time or other, the bulb was brought into England.

"Chaucer, writing five hundred years ago, mentions the onion as a well known domestic vegetable. Another three hundred years takes us back to the Norman Conquest, and I think we may take another two hundred and say that a thousand years ago the onion was making its way into England. A thousand years sweeps away the history of England and leaves a small island torn with the strife of its recent Saxon conquerors and harassed with sea pirates, Alfred striving to bring unity from discord, and the dreaded Danes or Red Shanks seizing more and more of the fertile land. An island almost unknown to the nations on the Continent who have enough to do to hold their own from each other and foreign foes, but who, nevertheless, not unmindful of seed time and harvest, gather in annual crops of the juicy bulbs we call the onion.

"Another thousand years and Britain is an island lying far, far away from civilization. Vague rumors of a land beyond the sea there may be, but vagueness lends terror and makes the island the home of monsters and ogres. And Europe? Misery untold. Wherever nature has been kind war has laid waste. Rome is pushing her con-

quest on the Rhone, and hordes of hungry Teutons are pouring into Gaul from the Northeast, while as many Cimbrians are making their way into the South through the passes of the Alps. Italy itself is threatened, and fear of foreign invasion arrests for the moment the strife of parties at home. And yet somewhere in Italy some one is finding leisure to cultivate the onion, and many varieties are grown for the rich men's tables and gourmards discuss the flavor and call their favorites by the names of countries. The Cretan, Samothracian, Cyprian and so on.

"Two thousand years have taken us back to the border land between history ancient and modern. Another thousand and a few more and we shall hear the groans of the Hebrews in Egypt as they drag the heavy stones for the massive forts of Rameses and Pithom or make their daily tale of bricks under the sharp gaze of guards who stand over them with rods. In vain they petition for relief. The work is pressing. Useless are all attempts at revolt. The power of Rameses is great; his vigilance leaves no loophole for escape. But death, greater than Rameses, takes the mighty conqueror and his son and Menephthah rules in his stead. Then a successful conspiracy is made and the Hebrews, under Moses and Aaron throw off the yoke of Pharaoh and defeat him on the shores of the Red Sea and we hear the songs of triumph of these emancipated slaves as they take their first steps in freedom.

"But now unthought of difficulties appear—the journey to the land of Promise is not one long holiday of pleasure. Some present privations seem harder to bear than the late fearful slavery, and praising the good old times they revile Moses and ask him bitterly, 'who shall give us flesh to eat? We remember the fish which we did eat in Egypt freely, the cucumbers and the melons, and the leeks and the onions and the garlic.'

"And these onions whose flavor could be better remembered than the hardships of tyranny; can they be of the same species as the onions exhibited here? Certainly they are, they are grown in Egypt to this day and called now by the very name used for them by masters and slaves when Israel was there in bondage.

"More than this, the designs on the ancient monuments show us often this very onion. For the onion was highly prized by the Egyptians and a variety was grown so excellent in all its properties that they worshiped it as a divinity. Shall we then find our first onion in Egypt? No, there is no native plant there which could have produced it and as long as we can find a trace of it in Egypt it is a cultivated plant and highly cultivated too. How long has it been cultivated there? Three thousand years, four thousand, five, six, seven thousand. Seven thousand years ago when a few wretched savages scattered over Europe were tearing from nature and each other a bare subsistence, in the Valley of the Nile the Egyptians were enjoying a happy, peaceful and sometimes jolly life. The tombs of Memphis are covered with pictures of feasts and games, dances and boat tournaments; poets are chanting verses and girls are dancing with hair dressed up with plates of

gold. Seven thousand years have passed since the building of the first pyramid. Yet even then Egypt was an old country; its people civilized; its architecture grand in idea and perfect in execution; its language not only formed but reduced to writing; its agricultural life was rich with oxen, asses, dogs and monkeys, antelopes and gazelles, geese, ducks, swans and slaves of Numidia. Egyptian history begins before the building of this pyramid perhaps three thousand years, and behind that again there must be an immensely older history, making the emergence of this civilization from the savage life of the cave-dweller. Where are we now?

"Ten thousand years away from the life of today—far away in Egypt, with the rich farmers on the banks of the Nile. Whether or not we shall meet our onion there, who shall say? Some time, in that remote past it was brought into Egypt, and it was brought from India.

"History can tell us no more. The sacred writing of the Hindus, the oldest records of the Chinese, mention the onion, but always as a cultivated plant.

"If we would find our first onion we must leave history and try some other line of inquiry. Let us join the party of some exploring botanist, and with him search Europe, Africa and Asia for a specimen of the native onion, which some time in the long-forgotten past was deemed worthy of cultivation. Our search, like our history, gradually narrows itself, until we find ourselves climbing the mountains of Afghanistan and Beloochistan, and exploring the table lands behind the Hindu Kush Mountains. And there, in the birthplace of our race, we find our onion—the *Allium cepa*—from which have sprung all the onions grown all over this wide world."

[It would add greatly to our knowledge if some one familiar with Mexico would tell us what the Mexican onions, as reported by Cortez, were. There are several native species of onion, and these, though very different from the garden onion, might be capable of being improved, and perhaps were improved; or the onion of Cortez may have been a species lost in a wild state, just as our garden onion seems to have become long before modern history began, though Mrs. Claypole indicates that the original has been identified in the mountains of Afghanistan.

As Mrs. Claypole says, the kind of onion known to the Mexicans as *xonacatl* is certainly not the European onion. Hernandez, who wrote on the flora of Mexico, in 1790, says that the *xonacatl* is a species of onion, with a two-cleft or "bifid root." The term seems to be a generic one, representing rather the odor than the bulb. *Quahonacatl* is a shrub with leaves "like a lemon," but "with the taste and smell of garlic or onion." There is an immense field for intelligent research as American inquisitiveness presses on Mexico.—Ed. G. M.]

THE INTRODUCTION OF THE POTATO TO EUROPE.—There has been an outburst of literature in England on the subject of the introduction of the potato. A number of writers contend that none of the names connected with the histories had anything to do with it. One writer says, mildly:

"Possibly, though hardly probably, there were other return voyages of which we have no record. If we are to attempt to select a possible one at all, this of 1586 is the most likely. It may be a matter of no moment to decide what particular expedition brought the potato, but so many histories state Raleigh brought it from Virginia, it is perhaps well to make clear that this is inaccurate. All the various statements are made with an air of accuracy which is without foundation, and of authority to which they are not entitled. In the absence of proof we can but surmise."

No effort is yet made to show that no such a person as Sir Walter Raleigh ever existed, or to prove that the "reign of good Queen Bess" is wholly a myth.

CURATOR OF KEW GARDENS.—In 1864, Mr. John Smith who had for so many years ably filled the position of curator in these famous gardens, resigned from age and infirmity. Another John Smith, who was gardener to the Duke of Northumberland, was appointed in his place, and fully maintained the high character the gardens had achieved under his former namesake. Now he has had to retire from ill health. The first of the name is still living. Mr. Nicholson, who has long been an assistant in the gardens, has been appointed curator in Mr. Smith's place.

USEFUL NURSERIES.—Mr. J. Wragg, in the *Iowa Homestead*, make the good point that numberless supposed new things under new names, but which are really old and common things at very novel and astounding prices, might be readily detected if parties would only send and keep for reference the catalogues of leading eastern firms. If the new name is not found there, it most likely is of doubtful character. He names the nurseries Hoopes Brother & Thomas and Ellwanger & Barry, as among those whose catalogues should be regarded as authority on such questions.

AMBROISE VERSCHAFFELT.—Through the still popular *Coleus Verschaffeltii*, as well as by many other plants named in his honor, Mr. Verschaffelt was well-known to American flower lovers, who will be sorry to read the following which we find in the *London Journal of Horticulture*:

"Many of our readers will regret to hear of the death of M. Ambroise Colette Alexandre Verschaf-

felt, better known perhaps by his familiar name of M. Ambroise Verschaffelt of Ghent, which occurred on the 16th inst, at his residence, 98 Chaussée de Courtrai. M. A. Verschaffelt was one of the most prominent of the great Belgian nurserymen, and his name was as 'a household word' throughout the world of horticulture. The founder of the vast establishment now directed by M. L. Linden in the Rue de Chaume, he there carried on an extensive trade for many years, till he relinquished it in favor of M. J. Linden, who was at that time in business at Brussels. Since then M. Verschaffelt has lived in retirement, though not in idleness, for he still retained his love for horticulture, and occupied his leisure in cultivating those plants which commended themselves most to his horticultural tastes. For a considerable time M. Verschaffelt has suffered from a painful malady—we believe cancer of the tongue—to which he succumbed. He was the founder of 'L'Illustration Horticole,' and besides holding many honorary offices in Belgium he was officer of the Order of Leopold, was decorated with the 'Croix-Civique' and the following orders—St. Maurice and Lazare, the Legion of Honor, St. Anne of Russia, the Medije, Frédéric of Wurtemberg, the Lion of Zœhringen, Adolphe of Nassau, Grand Duke of Hesse, and the Dukes of Nassau and Oldenberg. M. Verschaffelt was born at Ghent, on the 11th of December, 1825, and was consequently in the sixty-first year of his age."

AGRICULTURAL REPORTS.—Prof. Bessey says: "Agriculture has been cursed by a greater amount of very poor work under the name of experimentation than any other of the great industries. Dealing as it does with the soil, the atmosphere, plants and animals, one would suppose that careful and expensive experiments would invariably be confined to men trained in one or more of the great modern sciences—chemistry, physics, botany, zoology, geology, meteorology. That such has, however, not been the case, is shown by an examination of the reports which have appeared with more or less regularity ever since the agricultural colleges and agricultural departments of the State universities were organized. With here and there an exception, such reports have contained nothing which was of any value to a scientific investigator in any field whatsoever."

INSECTS AFFECTING THE ORANGE.—Report made under the direction of Prof. Riley by H. G. Hubbard. Published by the U. S. Department of agriculture.

This is a volume of 220 pages, with illustrations and descriptions of the insects injurious to the whole citrus tribe, and with accounts of such remedies as have come within the knowledge of the Department. It is a work of very great value to the orange grower.

PROCEEDINGS OF THE MICHIGAN HORTICULTURAL SOCIETY.—From Charles W. Garfield, Secretary. This is the volume for 1885, and makes a large book of 513 pages. This society has had the wisdom to establish auxiliary societies in different counties of the State, and in this way is better able to represent the condition of things over its whole territory than where these aids are wanting. A large portion of the volume is devoted to the very interesting topic of forestry, and there is a digest of the proceedings of the American Pomological Society, which was a matter of so much interest to Michigan last year.

THE ANNUAL REPORT OF THE PENNSYLVANIA STATE HORTICULTURAL ASSOCIATION FOR 1885.—Secretary, E. B. Engle, Waynesboro, Pa. This volume is illustrated by a colored lithograph of the fringed petunias raised by Mr. Rupp, of Shiremanstown, and plain lithographs of the Keim and Cheese apples, Pennsylvania seedlings, which it is one of the objects of the proceedings to illustrate.

HINTS ON THE HEATING OF GREENHOUSES.—By A. B. Fowler, Exeter, N. H. Mr. Fowler is well known to our readers by his excellent contributions on "Steam Heating." This is a pamphlet treating of hot water as well as of steam heating, and will be found of great value to all who may want to erect glass-houses of any kind, as well as those who may wish to learn of the great progress made in greenhouse heating.

TOMMY'S FIRST SPEAKER.—W. H. Harrison, Jr., publisher, Chicago, 1886. Not long ago "our baby" was desired by his teacher to choose some small piece and recite. The whole library was ransacked, but little suitable to a "little boy" was found. This little book was not there, or the labor would have been easy. It is a defect in modern education that while children are taught to acquire knowledge, but little aid is given their powers of distributing what they acquire. Reciting does just a little towards it. It practices the memory, and that is some gain.

ON SOME POINTS IN THE COMPOSITION OF SOILS.—By Sir J. B. Lawes, and Dr. J. H. Gilbert. When agriculture does take rank with the sciences, the honor will be largely due to the work of these "Rothamsted farmers." They have been making painstaking experiments for over quarter of a century, and many of them have set disputed questions at rest. The present effort shows that the fertility of soils is dependent on the nitrogen it contains.

THROUGH THE YELLOWSTONE PARK ON HORSEBACK.—By Geo. W. Wingate. New York: Orange Judd Co. 1886. The wonders of the Yellowstone is now an old story, and yet it is one of those rare instances where it is not difficult to lend fresh interest to a twice-told tale. It is only recently that one may get easily to this wonderful spot, and true interest in it therefore is only just awakening. This book tells how best to get there, and to manage best when one has got there, and what best to see. It will be for many years an instructive and entertaining book to the thousands who will want to see and study the stupendous works of nature gathered together in the Yellowstone region.

THE LAW CONCERNING FARMS, FARMERS AND FARM LABORERS, TOGETHER WITH THE GAME LAWS OF ALL THE STATES.—By Henry Austin, of the Boston Bar. Published by Charles C. Soule, Boston. 1886.

One of the last things for any sane person to do is to go to law. But people need not buy this book in order to learn how to get the law on a neighbor, but they will do themselves good service to know what the law is so as to avoid a trespass on their neighbors' rights, or how to defend themselves if they are forced into law by the stupidity of others. It is an extremely interesting book, and will interest any one. It gives an abstract of hundreds of cases in every part of the Union, that have any bearing on the work of the cultivators of the soil.

It has also the useful lesson of showing up the uncertainties of the law. The following is what is said of the right to pick fruit from overhanging trees, of fruit falling into a neighbor's land, and of the right to cut off overhanging branches:

"Where the farmer has a tree growing near a boundary line, even if the roots extend and grow into the land of his neighbor and derive nourishment therefrom, so long as the trunk remains on the farmer's land the tree is his property, and he is entitled to all the fruit, notwithstanding some of its branches may overhang his neighbor's land. If the farmer is prevented from reaching over and picking the fruit by the use of force by his neighbor, the farmer may have an action for assault and battery.

"In a New York case, a lady (whose father owned some fruit trees) stood upon the division fence, and undertook to pick cherries from a limb of a tree which overhung the neighbor's land. The neighbor forbade her, and on persisting, attempted to prevent her by force, and did her personal injury, for which he was obliged to pay her, through the courts, one thousand dollars.

"If the farmer's fruit fall into his neighbor's land, a question may arise as to his right to go

upon it to recover his fruit. It seems that the law on this point is not settled, but the farmer would probably have an implied license in law to enter, if possible, without any damage to his neighbor.

"The adjacent owner may cut off the branches or roots up to the line of his land; but, if he uses them, he will be obliged to pay the owner of the tree what they were worth.

"Where a tree stands upon the boundary line between adjoining owners, so that its body extends into the land of each, they own the tree and fruit in common, and neither is at liberty to cut the tree without the consent of the other, nor to cut away the part which extends into his land, if he thereby injures the common property."

It is evident that the "law" in these cases is not consistent. The neighbor would have the right to cut off the roots of his neighbor's trees that fed on his ground, but he has no right to gather the fruit which were fed from the roots growing on his own ground. He may not pull the fruit from the tree, but he may cut away the branches which bear the fruit. He may not pick up the fallen fruit from overhanging branches, but he may authorize another to pick up "anything" lying on his property and he may take from this person the fallen fruit. He may not cut down a tree standing exactly on the line, because that would kill the whole tree, but he can slice off his half just up to the pith or median line of the tree and kill it in that way if he wants to. When the lady was assaulted for getting the fruit from overhanging branches, it is not clear whether the one thousand dollars were paid as damages for injury resulting from assault, or for preventing the owner from getting her own. Altogether we may read and read and yet get no understanding as to why this or that is the law, or anything about the common sense of the thing; but still it will be of interest to know that this judge has decided this in this way, or that in that, even though they may seem contradictory, for it is on "decisions" that lawyers often have to rest their cases. It is perhaps well that they are contradictory, for any side can then get one to suit.

PROFITS IN POULTRY.—New York: Orange Judd Co. In these days a work that has "profit" as part of its title, is bound to get a good patronage; and this book, with 256 pages and copious illustrations, will no doubt have a good sale. Pleasure, as well as profit, however, receives attention, and the publishers believe that no poultry raiser can peruse this volume without both profit and pleasure—a belief in which the reviewer shares.

HOW TO MAKE MONEY WITHOUT WORK.—This is the title of an unannounced book which

many are looking for as soon to appear. We have not heard the name of the author. A sale of at least 100,000 in a few weeks is confidently expected.

SCRAPS AND QUERIES.

DOCK—NOT BURDOCK.—Mr. T. S. Gold, West Cornwall, Conn., kindly corrects as follows: "Did you copy an error or was it a slip of the pen when you speak of the 'common Burdock' as 'Rumex?' The Burdock is *Lappa* and widely different from the common docks, which are evidently referred to as food for the 'garden web-worm,' page 182, in notice of this worm taken from Prof. Riley's Report on Entomology, which I have not at hand. Doing our best it is hard to keep these common names unmixed, but this is an appropriate and widely recognized name.

"This first day of summer finds vegetation well advanced and everything promising."

[It is evidently a slip of the pen on the part of Prof. Riley, who no doubt intended simply Dock, when he wrote Burdock. The Burdock with its incurved prickly burrs which the children stick together in large masses is well known under this common name.—Ed. G. M.]

THE EGLANTINE.—A correspondent inquires whether she is not correct insisting that the Eglantine of English poetry is the Sweet-brier? This has been so often gone over in these pages, that only for the inquiry it would hardly seem necessary to revert to it. So far as poetry is concerned, Milton's *L'Allegro* would seem to be decisive. "Though the sweet-brier, or the vine, or the twisted eglantine," is certainly decisive that this great poet had distinct plants in his mind. We never heard it doubted till meeting with the doubt among American writers, that English authors and English and French people, meant the dog-rose, when speaking of the eglantine.

THE AMERICAN FLORIST.—In our note on the American Beauty Rose in our last, we referred to the *Florist*. The *American Florist* was of course referred to, as there is no other magazine of the name now—the English *Florist and Pomologist* having stopped publication. Our neighbors might be glad of the opportunity to shorten their title, as that is the order of the day among the roses the florists deal in; but as they prefer the long name to the short one, we cheerfully make the correction desired.

NEW OR RARE PLANTS.—A correspondent says: "Last fall I saw an 'Encyclopædia of Gardening,'

published in London, in 1825, and was surprised to see mention of things that have been offered as 'new' within the last ten years; also to see how well known and how much used were our beautiful native shrubs, especially azaleas, rhododendrons and other Ericaceæ."

[Most of the Ericaceæ delight in a moist atmosphere. They get more of this in England, and hence thrive better there than they generally do here in their native country. It does seem that even among plants, as well as among human beings, there is a longing for "a better land" than that in which they may be sojourners, and that that longing may not be altogether an ungrounded hope. These Ericaceous plants go in England under the distinctive name of "American plants."

In respect to plants, we suspect that when Solomon said there was nothing new under the sun, he must have had them in view. Fashions change. In gardening the things now "the rage" quiet down in the near future. Not long ago there was a great demand all over the world for "new hot and greenhouse plants." On the table before us is a letter from a leading dealer in England stating that the trade in them has almost wholly died out. In a few years the introduced plants will also die. But with the revolving wheel of time the taste will come again, the plants will have to be re-introduced, when they will be wholly "new" to the multitude.

THRIPS.—"Vis-a-vis" writes: "I feel like joining you in your half-hearted protest against using thrips for the singular as well as for the plural, for there is no real reason why we should adopt the whole grammatical structure of a foreign word, when we want a new term in the English language. Foreigners do not behave so critically when they want to use an English word. I have before me Loudon's *Encyclopædia of Plants* and I find that when our English word 'Jones' becomes latinized to represent a plant, it is not Jonesia, but *Jonesia Africana*. Nor do we always behave so critically. We have no rule; sometimes it is one way, sometimes another. When we have taken 'depot' to signify a railway station we have saved the orthography while adopting the pronunciation. In 'tardy' (tardif) we have taken the French sound, and changed the spelling; in 'tapis' (carpet) we take the spelling, but pronounce it in English. If your readers would only all agree that 'thrips,' plural, should be 'thrip' in the singular, I believe custom would soon sanction it; but if we must say 'thrips' in the singular, and still 'thrips' in the plural, I suppose we must."

HORTICULTURAL SOCIETIES.

COMMUNICATIONS.

THE SOCIETY OF AMERICAN FLORISTS.

BY JOHN BURTON.

The meeting of Florists to be held in Philadelphia this summer, will, I believe, be an event long remembered by the commercial plant growers of the country. The occasion being the second annual convention of the Society of American Florists, commencing Aug. 18th, and continuing to the end of the week.

That these meetings are going to be of immense benefit to the trade and horticulture in general, there can be no doubt. There will be essays by some of the most able men in the business on a variety of subjects, followed by discussions that cannot fail to be of interest to all lovers of plants. But the time when the most free opinions will be given, and perhaps most valuable information received, will be when small groups of men are collected together in the morning or between sessions, each giving his experience in some particular branch, and all hearing something new and of interest to them. And this is a part that will not be printed in the Secretary's report of the meeting, making it all the more important that all who can, should attend the convention. For, while the annual report of the Society alone is well worth the membership fee, some of the most beneficial and pleasing events cannot of necessity appear in it.

It is often said, if two florists meet they immediately commence a discussion as to the merits of one plant, or the correct treatment for another; and when they part each has learned something. What then must be the result of this meeting where there will be hundreds of such gatherings, made up of representatives from all parts of the country; and from the great interest shown in the different sections there is every reason to believe each State will be represented, and some by very large delegations, making this, without question, the largest gathering of florists ever held in America.

The local committee of Philadelphia are making strenuous efforts to give the delegates a reception worthy of the city, and will, without doubt, succeed, as they are receiving the assistance of every florist in town. Perhaps one of the

pleasantest features between business hours, will be a visit to Wootton, the country seat of Mr. G. W. Childs, who has kindly invited the delegates in a body to visit and take lunch with him.

Chestnut Hill, Philadelphia, June 9th, 1886.

EDITORIAL NOTES.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—The 35th meeting of this body will be held this year at Buffalo, commencing August 18th. The different departments of science have now grown so large, that members in many cases can only care for their own specialties. The botanists have organized themselves, and the Botanical club is regarded as one of the most enjoyable of all the smaller bodies that go to make up the grand constellation.

GERMANTOWN, PA., HORTICULTURAL SOCIETY.—At the June meeting of the Germantown, (Pa.) Horticultural Society, there were exhibits of cut roses, the best ever seen at any of the meetings. As showing what sorts are considered the best, the annexed is a list of those in the collection of Messrs. Lonsdale and Burton, to which was awarded first premium; with one exception—hybrid perpetuals.

Miss Hassard.	Anna de Diesbach,
Louis Van Houtte,	M ^{lle} Eugenie Verdier,
Fisher Holmes,	La Roseire.
Alfred Colomb,	Francois Michelin,
Prince of Wales,	Captain Christy,
English Moss,	Magna Charta,
Gloire de Dijon,	Mad. Gabrielle Luizet,
Marie Baumann,	Prince Camille de Rohan,
Marquise de Castellane,	John Hopper,
Rev. J. B. Camm,	Md. Isaac Perrier,
Paul Neyron,	Baroness Rothschild.

The Sharpless strawberry still keeps its place as the best for general culture, its ample, luxuriant foliage ensuring a full supply of large fruit, in ordinary seasons, and of its flavor nothing but praise can be said. At this meeting it was the leading sort in every collection exhibited. Alongside of it in many cases was the Captain Jack, a sort that stands high in the estimation of the cultivators, as well for its perfect form as for its general good qualities. Boyden, Cumberland and Longfellow are also favorites, the latter for its very superior flavor. In the collection of vegetables exhibited by John F. Turner, of School Lane, was a dish of early potatoes grown from sprouted sets, as recommended in the MONTHLY some years ago; the

plan being to plant the sets with the sprouts on instead of rubbing them off, as is usually done. Mr. Turner says it has given him potatoes fit to use at least two weeks earlier than usual. Those he exhibited were from two to three inches in length, while other exhibitors had none in their collections. His assortment consisted of some thirty sorts, all unusually well grown for the season, and hard to beat, showing Mr. Turner to be a master hand in the vegetable garden.

THE NURSERYMEN'S CONVENTION.—The meeting at Washington was a great success. Some three hundred members were in attendance. Col. Colman's address of welcome was warmly applauded. The officers for next year are C. L. Watrous of Iowa, President; M. A. Hunt of Illinois, 1st Vice President; D. Wilnot-Scott of Galena, Secretary, and A. R. Whitney of Franklin Grove, Treasurer. As we go to press before the conclusion of the meeting, we are unable to give more than that next place of meeting is Chicago; or any proceedings, except that a resolution asking congress for legislation looking to the suppression of oleomargarine was adopted.

PENNSYLVANIA HORTICULTURAL SOCIETY.—A rose exhibition was held on the 8th of June, and an excellent display made. The first premium was awarded to H. A. Dreer, and the bronze medal to Mr. Hughes, gardener to George W. Childs, Esq.

HORTICULTURAL SOCIETY OF NEW MEXICO.—Even this far-away part of our territory has grown in wealth and intelligence to the degree that impels it to take so great an interest in horticulture as to start a horticultural society. Mr. Arthur Boyle is President, and Mr. James K. Livingston, Secretary. The quarterly meeting was recently held at Santa Fe, and was well attended by the leading ladies and gentlemen of the city. It has members in nearly every county in the Territory. The midsummer meeting will be held on July 2d.

In his address at the last meeting the President explained that horticulture was only in a very limited sense a branch of agriculture—and in no greater a sense than that agriculture is, once in a while, a branch of horticulture. The mission of horticulture is one wholly distinct from that of agriculture. While the field-culture of fruits and vegetables, as a matter of profit and industrial development, would engage a large share of the oversight of the New Mexican Horticultural Society, the society, he said, did not intend to forget that horticulture was the art which beautified the

land, and especially the land which surrounds our homes. It was not the agriculturist, he thought, but rather the horticulturist, that could fervently sing with the poetess:

"God might have made the earth bring forth
Enough for great and small;
The sturdy oak and cedar-tree
Without a flower at all.

He might have made enough, enough
For every want of ours—
For medicine, toil and luxury,
And yet have made no flowers.

Our outward life requires them not,
Then wherefore had they birth?—
To minister delight to man,
To beautify the earth.

To comfort man, to whisper hope,
When e'er his faith is dim;
For whoso careth for the flowers,
Will care much more for Him."

THE HOLLAND PREMIUMS AT THE PENNSYLVANIA SHOW.—Mr. C. Eisele, Philadelphia, says: "Allow me to call your attention to an error in the May number of the GARDENERS' MONTHLY, in reference to the Holland Medals awarded at the Spring Exhibition of the Pennsylvania Horticultural Society. You mention a Silver medal awarded for twenty-five varieties of Hyacinths to Mr. Warne. Now a mistake like this should not occur in a magazine like the MONTHLY.

"In the first place, there was no silver medal awarded at all; the first prize was a gold medal, the second, a silver gilt medal; the silver medal was not awarded for the simple reason there was no third competitor. Second, There was no medal offered for twenty-five varieties, but for fifty named varieties. Third, Mr. Warne could not have been a competitor for the Holland Prizes, even if he wanted to, for they were offered for nurserymen, seedsmen, and florists only.

"The schedule for the Holland Medals as above stated, were for fifty named bulbs in fifty pots, the collection which took the gold medal had several duplicates and some varieties were not named at all. Did the judges overlook this point?

[We have to regret that any error occurred; we can only say in extenuation that it is extremely difficult for a reporter to tell "what is what" in matters of this kind. Plants are crowded together, no one can tell how many are "for competition" or what number are mixed with them, merely to "add to the beauty of the hall." A "first premium" set of hyacinths may be mixed up with a lot of Jonquils or variegated plants, and the second premium lot, perhaps among a lot of roses belonging to somebody else a hundred yards away. The visitor has nothing to guide him; and as for telling whether the varieties are wrongly named or unaccessible places, that have to be hunted for like as for a needle in a hay mow, and when found illegible from age in many cases, render any attempt at getting a list of names out of the question. Mr. Eisele's plants were not like this, as he is one of the more careful kind; but so many are that the only wonder is that the reporters or judges are able to do as well as they generally do.—Ed. G. M.]

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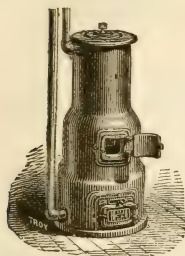
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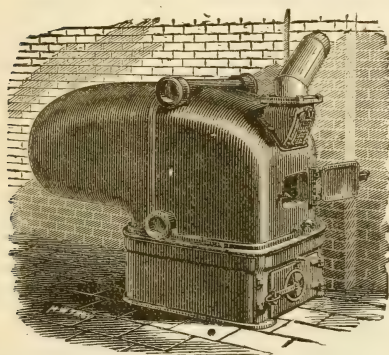


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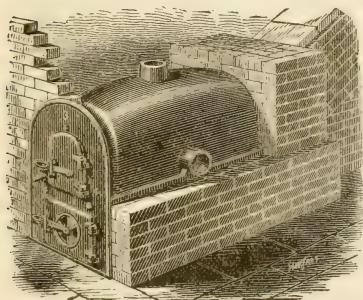
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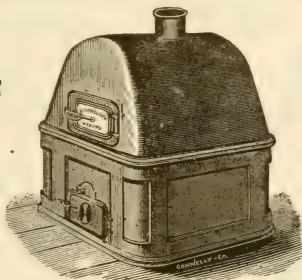
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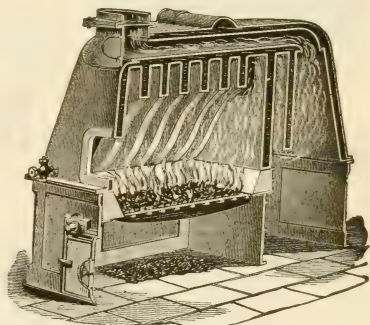
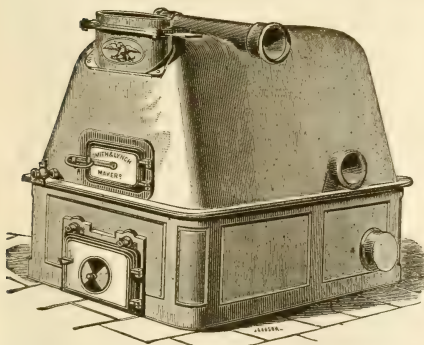


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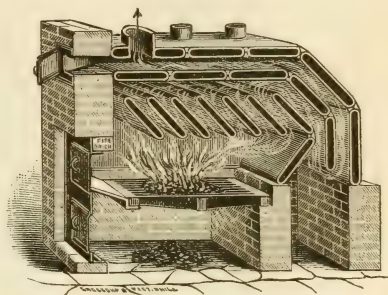
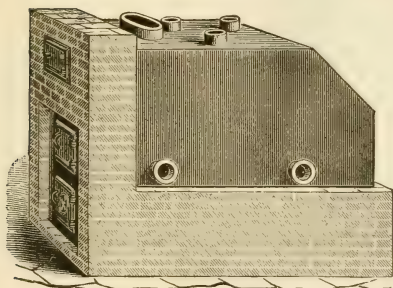
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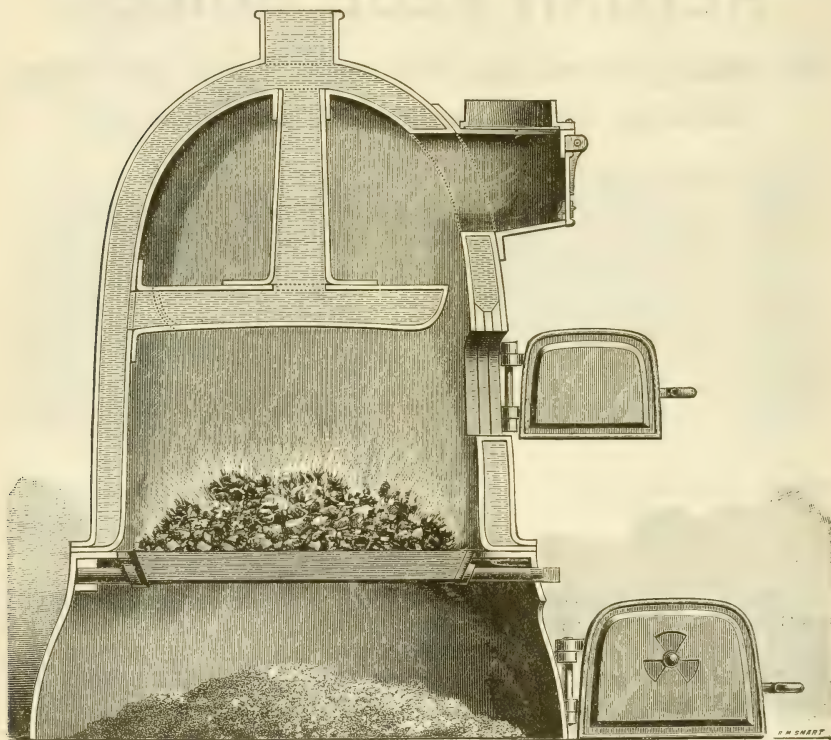
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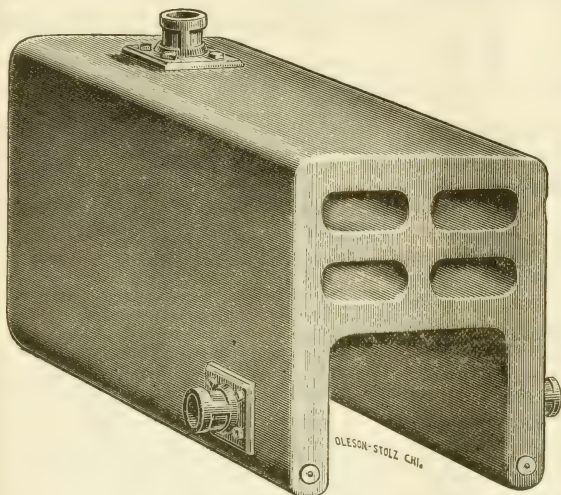
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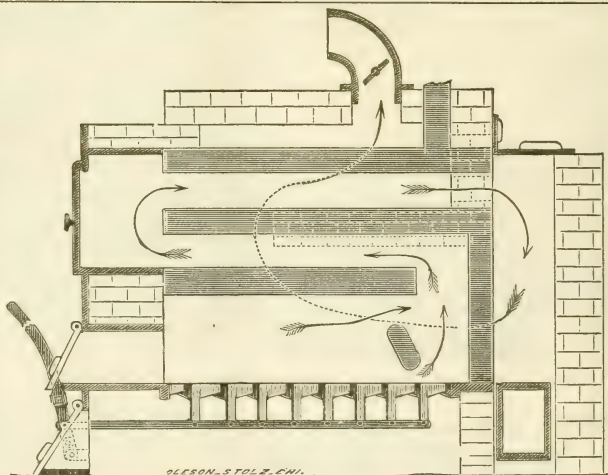
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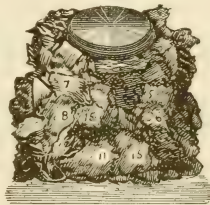
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AUGUST, 1886.

NUMBER 332.

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SEASONABLE HINTS.

The gaiety given to gardens by the massing of colored leaved plants would be sadly missed if the fashion were abolished. Indeed, where mere general effect in gardening is desired this system of bedding has become almost indispensable. It is very important that the points of the growing shoots be kept regularly "nipped," and, when flowering plants such as geraniums are employed, that the flower clusters should be cut away as they fade. It is the production of seed that exhausts the vital powers of a plant; an annual becomes a perennial when not allowed to seed.

Those who desire to thoroughly enjoy flowers, will have a rich treat in the herbaceous border. It is a surprise that so few have this adjunct to the garden. From early spring to winter there is a continuous succession of flowers. We have a friend who grows his in short rows, as a nurseryman would do. The border is about 3 feet wide on each side of a 4-feet wide grass walk, and enough plants to make a 3-feet line are used. The little rows are about a foot apart, and a label at the end of the row near the line of the grass walk tells the name of the plant in the row. We should judge there are not more than a couple of hundred of species in the border, yet on a run through with him on the Fourth of July we jotted down

the names of sixty-four kinds in bloom, some, to be sure, just going out and others just coming in season. We give the list to show how great a variety of bloom one can have at all times, even in a comparatively small collection, in bloom at midsummer: *Hypericum prolificum* (a dwarf form), *Funkia Sieboldii*, *Chrysanthemum segetum*, *Senecio artemisiæfolia*, *Trifolium rubens*, *Stachys Canadense*, *Spiræa venusta*, *Allium Stellarianum*, *A. cernuum*, *Pentstemon Digitalis*, *P. barbatum*, *Omphalodes cappadocica*, *Stokesia cyanea*, *Stenactis speciosa*, *Actinomeris helianthoides*, *Coreopsis grandiflora*, *Melissa patavina*, *Silene inflata*, *Monarda didyma*, *Silene saxifraga*, *Lythrum tomentosum*, *L. salicaria*, *Statice plantaginifolium*, *Onopordon acanthium*, *Spiræa ulmaria*, *Achillea rubrum*, *A. ochroleuca*, *Lysimachia quadrifolia*, *Centaurea alba*, *C. nigra*, *C. ochroleuca*, *C. macrophylla*, *Hemerocallis fulva*, *Betonica officinalis*, *Tanacetum globiferum*, *Symphytum officinale*, *Veronica grandiflora*, *Campanula pulcherrima*, *Geranium sanguineum*, *Calceolae involucrata*, *Linaria repens*, *Phacelia tenacifolia*, *Erysimum Peroffskianum*, *Gilia multicaulis*, *Monarda purpurea*, *Aquilegia chrysantha*, *A. truncata*, *Rudbeckia hirta*, *Hesperis matronalis*, *Enothera riparia*, *Sherrardia arvensis*, *Lychnis coronata*, *Alyssum multicaule*, *Scabiosa colubrina*, *Gypsophylla paniculata*, *Dianthus deltoideus*, *Del-*

phium formosum, Sedum acre, S. speciosum, Lychnis chalcedonica, Opuntia Rafinesqui, Veronica grandiflora.

We were told that no particular effort had been made to get kinds that would flower at this season; only such kinds "picked up" here and there as the opportunity offered. It is well to remember that herbaceous plants generally love rich ground, and those succeed best who give the herbaceous border a liberal dressing of manure every year. The autumn is the best time, as it helps to protect from frost. Freezing in itself does not hurt, but it is freezing in light that injures. Freezing in shade is not near as harmful. If not allowed to seed, there is no difficulty in keeping kinds a long time. But some prefer to sow seeds occasionally, as more vigorous plants ensue. Plants weakened by overbearing often die out. This and poor ground are two of the chief causes of the disappearance of choice herbaceous plants of which some occasionally complain.

Towards the end of the month, and in September, evergreen hedges should receive their last pruning till next summer. Last spring, and in the summer, when a strong growth required it, the hedge has been severely pruned towards the apex of the cone-like form in which it has been trained, and the base has been suffered to grow any way it pleases. Now that, in turn, has come under the shears, so far as to get it into regular shape and form. It will not be forgotten that, to be very successful with evergreen hedges, they ought to have a growth at the base of at least 4 feet in diameter.

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ENCOURAGING FLOWER-LOVE IN THE YOUNG.

BY F. O. N.

The wider diffusion of a taste for agriculture, or floriculture, than now exists, would have the effect to elevate the moral and intellectual calibre of the rising generation. In this connection, I would suggest that at all colleges, agricultural or merely literary, a piece of ground be set apart to be divided into smaller plats, and placed at the disposal of such of the students as may desire to cultivate, and in such way as their taste or inclinations may lead them. These plats to be supervised or overlooked by some competent person, and reports made at the annual commencement of such as were found to be worthy of special

mention. The same idea in a different shape might be engrafted on our public school system, by having an annual exhibition in every grammar school of such plants as the scholars may have raised or propagated themselves, and giving a small reward for the best, and also for these accompanied by a history or description. The money thus expended would be of far more use to the community than much that is now spent upon music, and other matters of questionable importance. If some of the more wealthy members of the Horticultural Society, or others interested in floriculture were to add something in the way of a premium, it would be an additional stimulus. The plan is, I think, susceptible of much elaboration in the hands of those capable of giving it proper shape. *Philadelphia, July 2d, 1886.*

[Like our correspondent, we have often wished more could be done to encourage a love of flower culture among school children. One of the best means is to get the teachers, or officers of school buildings, to care for flowers. In the Philadelphia district we go into one school-house and find no sign of a flower anywhere. In another, window flowers will abound and the whole place have a cheery look in consequence. In this case the teachers love the flowers, and they happen to have a janitor who will look after them during the school holidays.

The Newton School in West Philadelphia is a paradise of flowers. Complimenting the School Committee on the beauty of the spot, they remarked that the whole credit belonged to the janitor. "He likes that thing, and we let him do it." It seems to us, that besides the premiums to school children, it would be a good thing to offer some to janitors and school teachers. When they get the love, it will soon pass to the children.—Ed. G. M.]

FLOWERING OF THE HOVENIA DULCIS.

BY GARDENER.

On the grounds of the Misses Drexel, at Torresdale, Pa., there flowered for the first time the above-named tree, in the month of June last. I do not remember reading any account of its flowering elsewhere in this country as yet, though it may have done so, as it has been introduced for some years. The specimen referred to is about 12 feet high, in bush form, and at the time referred to was full of flowers. The flowers are small, yellowish white, numerous, and produced in cymes, and may be said to be hawthorn scented.

The large, shining green leaves are quite attractive; and the character of the whole tree so unlike anything commonly planted, that it is truly a valuable addition to our list of hardy trees.

Philadelphia.

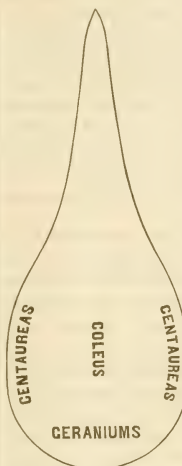
WEST LAUREL HILL CEMETERY.

BY MR. JOHN WOODING.

We do not read every day about the horticultural features of a cemetery. But there is often more to admire than marble, slate and monuments. Particularly is this the case with West Laurel Hill Cemetery, which is situated on a natural eminence, bounded by two railroads in a triangular manner; on the west by the Reading main line and south by the Schuylkill Valley, and is about ten minutes' walk from the Philadelphia county line.

Living near this place for the last five years, I often take a stroll through on a Sunday afternoon, where I find hundreds of others. It is visited by thousands of people during the summer months. I think this cemetery deserves to be classed among the finest and best laid out of any in this part of the country. There are a great number of once prominent people of Philadelphia buried there, as the names on the tombstones testify. I am surprised to see the number of bedding and other plants used on some of the lots. To say there are thousands is to speak moderately. One lot which took my particular attention, and which is worthy of special notice, seemed worth going some distance to see. I have the authority of Mr. John Albrecht, florist of West Laurel Hill, who supplied the plants this year and set them, that he used some four thousand plants. There are fine carpet beds of different designs, two of them Maltese crosses, and one an anchor, which looks very beautiful. The plants used are *Alternantheras* of different varieties and two kinds of *Echeverias*. There are two beds of *Euonymus* in variety. The whole is surrounded with a border 4 feet wide, full of roses and other plants. The size of the lot is 42x64 feet, and is owned by W. V. Lippincott, of Philadelphia. Mr. John Albrecht deserves great credit for the efficient manner in which he has done his work. He now has charge of the lot, and about one hundred others of smaller degree. I do not think there is a lot in this cemetery without flowers of some kind, and the place is kept in remarkably good order. There are about fourteen men employed, all under the superintendence of Mr. F. S. Britton.

There are some fine large flower beds of various designs, laid out by the cemetery company. One bed I noticed, in the shape of an anchor on the slope of a hill, is very effective. It contains *Geraniums*, *Coleus* and *Centaureas*, with an edging of



Golden Feather. I suppose this bed contains two thousand plants. There is a station at West Laurel Hill, about fifteen minutes' ride from Broad Street, Philadelphia, and the first thing that strikes your eye on alighting is a very peculiarly designed bed of flowers, about 60 feet long, something in the shape of a tennis bat, containing *Geraniums*, *Centaureas* and two kinds of *Coleus*. I suppose about two thousand plants in all. It is laid out by the cemetery company, and the plants supplied by Mr. John Albrecht, who has recently

started a very successful florist's business near here, and who tells me there is an increasing demand for all kinds of flowers in the neighborhood.

Gardener to Mr. A. S. Roberts, Pencoyd, Pa.

EDITORIAL NOTES.

ABIES ALCOQUIANA.—This proves to be one of the most beautiful of coniferous trees. The purple buds on the new growth look like blossoms. It is hardy as a rock, and seems so far free from insect troubles. According to Dr. Masters there are two species distributed under one name. The one in our country as commonly grown would be *A. Ajanensis*.

GOOD PANSIES.—Passing a friend's garden recently there they were in all their original loveliness, the wild English pansies! Small they were, to be sure, but still lovely. The single blooms were no larger than ordinary violets, but the purple upper petals were very distinct, and the lower yellowish-white petals well set off the purple lines that here and there stretched right through the length of them. We had to admit that they were miserable wild things, but still protest they were lovely for all.

Yet we suppose the popular taste will be for

large pansies—the larger the better—and when in the spring the successors to the earliest begin to diminish in size, we shall have the request from our fair readers to tell how to keep them from degenerating. Vick tells in a recent number of his magazine how to give them a good start:

"A spot for pansies should be selected where it is a little shady, at least in the middle of the day, if such a spot is to be had, but if not, it can be where it is fully exposed; a place entirely shaded is not desirable. A light soil made rich with well rotted stable manure would be a place the plants would delight in, but if the soil is heavy it can be greatly improved by digging in plenty of the same kind of fertilizer. Seed can be sown any time the present month or the next to raise strong plants before winter."

And we would add to this, that the way to keep the spring flowers up to their full duty is to keep on with the feeding Vick suggests. They are happy diners. A lady of our acquaintance has her pansy bed nearly as lovely this first day of July as it was on the 1st of April, merely by giving a watering of soap-suds once a week. Some help they get from the cutting they receive. Hundreds of pansy posies were cut to give pleasure to friends; and she avers that the more were cut away the more bloomed to make up for the cutting. In most cases it adds to the freedom of flowering when seeds are prevented from forming.

FLOWERS FOR GRAVEYARDS.—The New York correspondent of the Philadelphia *Ledger*, referring to the Decoration Day ceremonies in New York, says:

"Apropos of the day itself the *Hour* makes a timely suggestion, namely, as a great deal of money is spent in the decoration of the tombs, why not use a part of it in making the decoration permanent? 'Cut flowers,' we are reminded, 'fade before they have lain twenty-four hours on a grave or monument, and potted flowers, dropped hastily, do not last much longer. For the money that the flowers of a single grave often cost, a handsome rhododendron, Japanese maple, or some other hardy and long lived ornamental shrub might be planted. The appearance of prominent monuments, shortly after Decoration day, is even worse than that of flower-strewn graves in cemeteries, as every one will know who may pass next week the Lincoln and Washington statues in Union Square; yet a little money would provide low receptacles in which flowers would bloom until December."

THE CLAMMY LOCUST.—What a pity the locusts are so subject to the attacks of the locust borer. The Clammy locust, *Robinia viscosa*, is a particularly beautiful thing when covered in June with its numerous clusters of sweet rosy-white flowers. It is remarkable that this species, discovered by

Michaux in the Carolinas, has never been found wild since his time, and the species is now only known by garden specimens: The one in our mind while writing is in the garden of Ellwood Johnson, at Germantown.

THE COLORADO OPUNTIA.—Last year, speaking of hardy cactuses, we noted that *Opuntia Missouriensis* did not flower in Germantown. As if to show it can, if it wants to, it has given a number of its bright yellow blossoms. They bloom earlier than *Opuntia Rafinesqui*, and thus prolong the season of flowering of hardy cactuses.

ROSE, MARECHAL NIEL.—This is still one of the most popular roses in France, but, judging by the number of papers we read "on the culture" of this variety, it requires special treatment in order to induce it to do its best.

THE JAPAN CLIMBING HYDRANGEA.—This has not been found a good nurseryman's plant, as it takes too long to get started on a rapid run, and the American mind takes more stock in something like the gourd of Jonah that will cover a house top in a single night. Still it will have its turn some day in popularity. We are reminded of it by the following slip from the *Gardeners' Magazine*:

"The climbing hydrangea has the merit of great hardiness, and will be found a useful addition to the list of plants suitable for training up the stems and covering large wall spaces. It is said to attain a height of fifty feet when able to obtain the needful support. Upon this point I am not able to offer an opinion, but judging from the rapid progress it makes when planted in a border of rich soil there would probably be no difficulty in very quickly covering walls ranging from twenty to twenty-five feet high. The flowers are at first disappointing, for one naturally enough expects heads of bloom approaching in size and effectiveness those of the common hydrangea, *H. hortensis* and the well-known *H. paniculata*. The flower heads are of large size, but as but few are sterile they are exceedingly thin, and less attractive than could be desired. The trusses are very similar to those of *H. speciosa variegata*, and the flowers are white. The climbing hydrangea will be found in catalogues under the name of *Schizophragma hydrangoides*."

LARGE ROSES.—Some one regards the size of Her Majesty as something remarkable. It is certainly a large and fine rose, but many of the well-known popular roses have reached 7 inches across in this vicinity this year.

DESTRUCTION OF ANTS IN GARDENS.—At the July meeting of the Montgomery county, Ohio, Horticultural Society, Mr. Ohmer offered the fol-

lowing as a remedy for the black ant. It is given by Prof. Riley: "Bisulphide of carbon poured into the entrances of ant colonies will break them up very thoroughly. Pure kerosene oil, used often, will have the same effect."

Mr. G. R. Mumma says common salt, liberally applied, will rout them. But in Florida they say the black ant rather likes kerosene, and the purer the better.

ROSES AND THE ROSE BEETLE.—As a general rule, the rose, mock-orange, many spiræas, magnolia glauca, and many other things, have their flowers utterly ruined by the rose beetle, entomologically known as *Macrodactylus sub-spinosa*, in gardens near Philadelphia. This year they were all in bloom and over before this pest appeared, the flowering season of trees and shrubs being about two weeks earlier than usual. The insect was not forwarded with the season as the plants were. They put in their appearance about the 12th of June, but were not troublesome till about the 15th.

AZALEA AMCENA.—This Chinese and very beautiful dwarf azalea is well known from the peculiarity of having its calyx developed so as to look as if the plant had two corollas, one set like a cup inside another. A student at Swarthmore College, near Philadelphia, sent us this spring specimens found in a wood of the native wood honeysuckle, *Azalea nudiflora*, that had the same peculiarity.

GARDENING IN BRAZIL.—Every part of the world has its special fancy, and in Brazil the caladium is the chief delight of the gardener, and forms no mean feature in ornamental gardening. In the vicinity of Rio de Janeiro there are some who boast of having over a hundred varieties in their collections. We only know of these pretty things by the few kinds we see in hot-houses, or the large "Elephant's ear" or *Tan yan* which grows in open grounds in summer, but this is enough to indicate how beautiful a large collection in tropical gardens must be.

IVY ON TREES.—Ivy or any vine that runs perpendicularly up a tree does not injure it, unless branches from the vine extend along the branches, and by its mass of leaves smother the leaves of the tree. Vines like *Wistaria* that coil around a trunk do injure trees.

JAPAN GARDENING.—Park's *Floral Magazine* says: "Many of the plants cultivated in Japan to-day have been introduced from Europe and

America. The Rose, Azalea, Lotus, *Wistaria* and others are grown for ornament, and in a practical way the flower garden is not far different from the flower garden of America. Every Japanese dwelling, whether in city or country, has its flower garden; and great care is taken to harmonize the colors of the flowers, and make the garden attractive by introducing fountains and artificial rockeries. The dwellings are decorated inside by numerous foliage and flowering plants. One of the most common house plants is the *Selaginella*. This handsome plant is used as a background, or, it is so disposed among the flowering plants as to make an attractive and pleasing display."

THE JAPAN BURNING BUSH.—*Euonymus japonicus* is growing in favor as a dwarf evergreen for pots in window culture, and as a vase plant for lawns, and the mere artificial departments of gardening.

AKEBIA QUINATA.—This plant continues to grow in popular estimation as a climbing plant. Its plum-colored flowers are deliciously fragrant, and appear long before the honeysuckle makes an effort to perfume the surrounding atmosphere.

JAPAN UMBRELLA PINE.—One of the largest specimens of the *Sciadopitys* in Europe is, according to the *Garten Zeitung*, a fine specimen growing in the garden of Max Daniel Wolterbeck, at Valkenburg, near Arnheim, in Holland. It was planted where it now stands, in a very exposed situation, twenty years ago, and it is a healthy and beautifully formed tree. Moreover, it has never suffered in the least from frost or other climatal influences. Of pyramidal shape, it is nearly 13 feet high, with a circumference of a little over 21 feet. Two years ago it bore for the first time two ripe cones, and the seed produced fifteen seedlings. Last summer it bore only one ripe cone. We should like to know where is the largest and best specimen in the United States. The Editor has a very pretty one 5 feet high, but there are probably larger ones than this.

LARGE PLEASURE GROUNDS.—Some of our public parks are of great extent, but the best of these will not compare with some of the private grounds of the Old World. Longleat, the seat of the Marquis of Bath, is enclosed by a fence sixteen miles round, and embraces 5,000 acres. The carriage roads and drives through these grounds comprise sixteen miles. The dwelling-house is so large that 125 people have slept there at one time.

The highest class of gardening skill is required

to manage gardens like these. Fruit forcing is carried on very successfully. Hot-house grapes for instance, require extensive glass-houses. One, 55 feet long and 30 feet wide, is wholly occupied by the Black Hamburg, producing bunches weighing sometimes 7 lbs. Another, 90 feet long by 30 wide, has only four vines, which are so trained as to occupy the whole space. These are Muscat of Alexandria. These produce bunches about 6 lbs. each. The other, 50 feet by 30, is a house containing only five vines—two Lady Downes, one Prince's Black Muscat, and one Black, two black Alicante. Melons, or canteloupes as they would be called in our country, have a house 40 by 30 feet allotted to them. But only four plants are in the house. The branches are trained over the whole extent, and bear from early spring to fall hundreds of fruits. Separate houses have peaches, figs, etc.

NEW OR RARE PLANTS.

ALCOCK'S SPRUCE.—The editor of the *Rural New Yorker* prefers the Alcock spruce to the Colorado Blue spruce. They are both so beautiful, and so well adapted to culture in the Eastern States, that it is hard to say which ought to be preferred, but there are numbers who will surely say that the editor of the *Rural New Yorker* is not far wrong at the worst.

NEW ROSES.—Mr. E. L. Taplin tells the *Rural New Yorker*, after reviewing the claims of many candidates for popular favor now in the field, that "in common with one great horticulturist," he is convinced "almost too many new roses" are being introduced.

GRAY'S LILY.—*Lilium Grayi*, among a very large collection in Philadelphia, seems the earliest of any to flower. It was open on the 12th of June.

THE CHINESE FRINGE TREE.—This has the flowers in stiff heavy cymes, much as in the Lilac, and is in striking contrast with its more slender flowered relative, the American Fringe tree. Botanically it is *Chionanthus retusus*.

THE KAMTSCHATKA ROSE.—This beautiful red rose, which has been under culture near Philadelphia for nearly a hundred years, and which proves to be not materially distinct in a botanical sense from *Rosa rugosa*, recently introduced as the "Rameses" rose, has at least the peculiar advantage of flowering earlier—at least earlier than

the white variety. It was the earliest of all in a large collection of single roses near Philadelphia this year, being open in the first week of May. The *rugosa* was nearly two weeks later.

PTEROSTYRAX HISPIDUM.—Two distinct plants are in nurseries under this name. One has narrow leaves and looks as if it might not be distinct from some *Halesia*. The true plant has large leaves looking very much like those of the Witch Hazel. The white sweet flowers will make this a favorite among the stronger growing shrubs in our gardens. It is a rather recent importation from Japan.

INDIGOFERA DOSUA.—In gardens there is a dearth of good ornamental shrubs to flower about midsummer. Those which flower from old wood are about over, while the fall flowerers, or those which bloom at the end of spring growth, are scarcely in season. A capital dwarf shrub for this floral interregnum is *Indigofera Dosua*, an East Indian plant of the Indigo family, which is profuse in its presentation of purple spikes of pea-shaped blossoms. Besides its beauty it will interest the "children," besides those of larger growth who love to watch the singular ways of nature, by the manner in which the keel jumps back when any one touches it. It is supposed to have some "advantage" to the plant by preventing "in and in" breeding. The disadvantage here is, that it prevents our getting much seed at all, and hence the plant is rather rare in our gardens from the difficulty of propagating, which has to be done from shy-rooting cuttings. If those plants that "desire cross fertilization" had remained satisfied to produce seed in the good old-fashioned way, they would have progressed better through the world.

SCRAPS AND QUERIES.

VARYING LEAVES IN IVY.—A correspondent from Dunreith, Ind., asks: "Does the common English ivy often bloom freely? The form I have in mind is largely planted in the forests in England and Scotland, and the commonest seen in this country. I recently saw a large old plant in a 12-inch pot, growing at the end of an old greenhouse—inside—that has sported into a different leaf (sample enclosed), and different habit of growth, shrubby, and not vining, and I am told the sport, as well as plants propagated from it, are very free bloomers, flower clear yellow, nearly 2

inches in diameter. I have a plant of the sport about 15 inches high, in a 4-inch pot, not pot-bounded, that has several flower buds on it."

[All plants have somewhat different foliage when young than when mature. For instance, the honeysuckle, paper mulberry and holly are familiar instances. The younger leaves are pointed and more angular. In the holly the mature

leaves often cease to be prickly. In the ivy the usually halbert-shaped leaves often become almost round when the plant reaches the flowering stage, and cuttings or grafts taken from flowering branches maintain the round-leaved, shrubby condition. It is not a sport, in the ordinary meaning of that term, but a perpetuation of the flowering condition.—Ed. G. M.]

GREENHOUSE AND HOUSE GARDENING.

COMMUNICATIONS.

ÆRIDES VIRENS.

BY CHARLES E. PARNELL.

The dark, green-leaved air plant, *Ærides virens*, is a very beautiful epiphytal orchidaceous plant. It is a native of Java, from whence it was introduced by Messrs. Loddiges of the Hackney nurseries in 1842. It is a strictly stove plant, having broad, thick, obtuse, glossy green leaves, and produces its flowers in pendulous many-flowered racemes. The flowers emit a rich and delicious perfume; in color they are mostly white, blotched and spotted with crimson and lilac. It flourishes best in a very damp atmosphere during its season of growth, and can be grown attached to a rough block of wood by fine wire, provided the lower part of the stem and roots are enveloped in sphagnum moss. Or they can be grown best in wire baskets filled with sphagnum moss interspersed with broken pots. During its season of growth, which is from June to October, it should be given a plentiful supply of water, and a temperature of from 65° to 85°. It should also be grown in a shady situation, or where it can be protected from the rays of the sun; thus treated it will grow rapidly and flower freely. In the winter season, or from November to May, it can be exposed to the sun without sustaining any injury, and it should also be given a much lower temperature—from 50° to 60°. At this season it should be kept quite dry, almost to the suspension of water. Propagation is effected by a careful division or separation of the plant, and in doing this it is best not to separate or remove any young branches until roots have protruded from them, and after separation give the young plants very little moist-

ure until they show signs of growth. The young plants require a similar treatment to that advised for young plants.

The generic name is derived from "Aer," air, on account of its deriving so visibly its support from the atmosphere; and the specific, on account of the peculiarly rich glossy green color its leaves assume. *Queens, N. Y.*

HEATING SMALL GREENHOUSES.

"Dear Editor—Could you inform me the most economical way of heating a small conservatory 12x16 about 8 feet high? The building is detached save a board fence on the north side, though sheltered by houses on the east, west and north. By so doing you will confer a favor on a subscriber. Very truly yours,

"EUGENE J. G. DAILLEDOUZE."

Flatbush, L. I., N. Y.

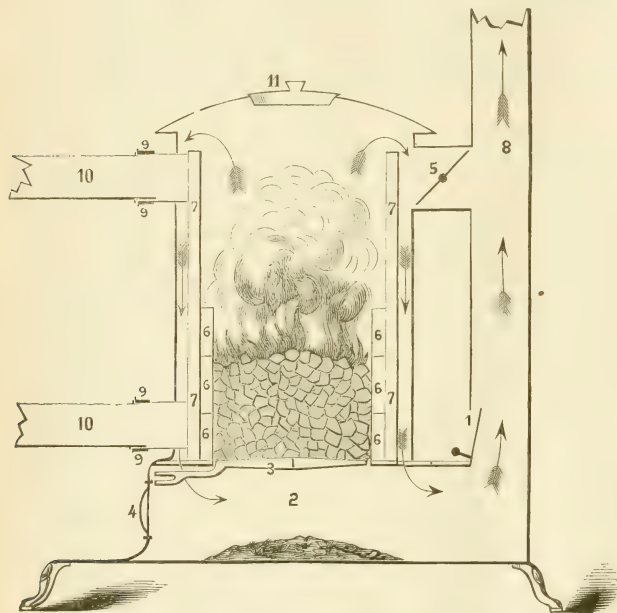
Similar communications often reach us. It is next to impossible to give directions that would be applicable to each particular case. One of the best ideas that ever came before the Editor was given by a correspondent in the *GARDENERS' MONTHLY* many years ago. The idea can be adapted to peculiar circumstances better than any other one, and we think it will serve a good purpose at this time to reprint the whole chapter. It is by Loring W. Puffer:

"I do not propose in this paper to advance any particular theory as to the circulation of hot water, but to confine myself to a few facts in my own experience. Many persons are deterred from building greenhouses because the heating apparatus must be either cumbrous or expensive, for it has almost passed into a proverb, that houses less than 50 feet in length, cannot be economically heated by hot water. Having solved that problem to my satisfaction during the past ten years, I

herewith give you the result: The office or parlor stove for anthracite coal of to-day, is an improvement over the old cylinder cast-iron stove, inasmuch as its peculiar construction allows a continuous fire to be kept for months, and when properly adjusted there is a perfect combustion of the coal; consequently no waste, no fires to rebuild, while ten minutes' time daily will keep them in satisfactory running condition. This improvement, so far as I know, was introduced by one McGreggor, some twenty years ago, and while very few

I have tested. Of course not much heat could be generated, as combustion goes on very slowly. But a good degree of heat can be maintained for twelve hours. Now having used these stoves for sixteen years, and withal, being a Yankee, I could never build a fire in my flue without contrasting the difference. The stove so simple, effectual, and neat in its working. The flue at its best, being unsightly, dirty and ineffectual to a certain extent, and using more time than I could well afford to spare. About ten or eleven years ago, having a

small propagating house to heat, I found a stove that would answer my purpose, and cutting some holes through the shell, inserted a bend of 2-inch gas-pipe, communicating with a wooden tank. This worked some time quite effectually, but the pipe clogged the fire, and after some thinking, I had patterns made, and a boiler cast, which should take the place of the fire-brick, the size being adapted to the amount of heat required for tank heating. This worked effectually and to my satisfaction until I sold the house. This was, I think, in the spring of 1863. Last fall I concluded that I would apply the principle in heating my greenhouse, which is 11 feet wide and 32 long. I secured the base and top of a McGee stove, and ordered a cylinder boiler of No. 16 gauge, sheet copper, made by a tinman. The boiler is 2 feet high, 16 inches outside, and 14 inches inside diameter. The copper is first riveted, and then soldered. The space between the two shells filled



1. Damper to admit cold air and check draft. 2. Ash pit. 3. Revolving grate, 12 inches in diameter. 4. Door to ash pit, with slide damper. 5. Damper for direct draft. 6. Fire brick. 7. Boiler. 8. Smoke pipe. 9. Wrought-iron collar on end of copper pipe—ends turned over. 10. Four-inch iron pipe; top and base cast-iron—sheet-iron outside. 11. Cover. The water pipes are to be understood as radiating from the side instead of the front, as shown by this section.

of these stoves are now in use, the principle involved can be found in nearly all the modern stoves known by the name of McGee, Orient, Base burner, Gas burner, and other fanciful names. It consists essentially in a cast-iron cylinder, lined with fire-brick, and surrounded at a distance of 2 or 3 inches, with a sheet-iron shell. The heat rising from the cast-iron cylinder to the top is deflected back and down between this and the sheet-iron shell and then finds access to the pipe, what is not radiated by the stove, through the base of the stove, and under and back of the fire to the chimney. The amount of heat lost in the chimney is not probably five per cent. A fire can be kept for forty-eight hours without touching. That

with water is 1 inch. The boiler is lined with fire-brick 1 foot high, leaving 1 foot exposed to the direct action of the fire. Fifty pounds of coal will fill the space to the top of the fire-brick. If filled to the top of the boiler, something over 100 pounds would be required. External and at about an inch distant is a sheet-iron shell, with smoke-pipe at its base. The fire is entirely surrounded by water, and the heat, after rising to the top, descends to the base of the boiler, and thence to the smoke-pipe—what has not been radiated. When the boiler is working well, the smoke-pipe will be about blood warm. Some heat is radiated by the sheet-iron shell, but by using a covering of felt, that would be mostly retained. The tempera-

ture of the house during the night is from 40° to 50°, commonly about 45°, and it never falls during the night. On March 5th, with the temperature outside at 10° below zero, and a driving wind, with an expenditure of 75 lbs. of coal in the twenty-four hours, the heat was steady at 45°, not varying one degree, and using but 95 feet of 4-inch pipe. The house contains 2700 cubic feet, fronts south, and is not protected by other buildings. The boiler cost forty-two dollars. The amount of coal used is from fifty to sixty-five pounds daily. The fire does not go out for weeks, and but for the fact that there is more or less slate with the coal, it could be kept up from fall until spring. An average of ten minutes per day will keep it working. There is one flow and two return pipes. The end of the flow pipe is 6 inches higher than the top of the boiler. It has always worked to my perfect satisfaction, and although only about 100 feet of pipe is attached, have no doubt that it would work 300 feet, but of course, using more coal. I send a rough draught of it; should be pleased to show it to any one. One of Hitchings' boilers that would do the same work would cost about one hundred and fifty dollars.

P. S.—I am not a manufacturer of boilers."

North Bridgewater, Mass.

THE OIL AND SULPHUR REMEDY FOR MILDEW.

BY A. VEITCH.

Ever since it became known that oil and sulphur combined is a safe and unfailing remedy for rose-mildew in greenhouses, several writers have treated the subject as unworthy of serious consideration. For reasons best known to themselves, these writers take the ground that water is as safe to use in this connection as oil, but how they reach this conclusion does not appear, as no mention is made of the means employed to ascertain the facts of the case—from which we infer that greater anxiety is manifested to condemn the practice than to test its merits.

Precisely how much more influence oil has over sulphur than water to prevent scorching, we do not know, but that it has more cannot be successfully gainsaid, and, although unable to state the nature of the difference, there are good reasons for believing that some sort of change occurs beyond the power of water to accomplish. The facts which go to prove this have been collected from various quarters and are most convincing. Some from personal observation, and others rest upon the testimony of several of the best and most experienced plant-growers in the country. Amongst these was the late W. Bennett, of Flatbush, who informed me that in an extensive establishment in New Jersey, over which he had some control,

there was a collection of rose-bushes literally infested with mildew. At his request, the oil and sulphur remedy was applied, and so strong that he was apprehensive every plant in the house would be destroyed. Instead of this, however, no harm was done to a single healthy leaf, whilst the mildew was utterly subdued. Quite a number of similar cases could be stated, all tending to show that there is greater safety in applying sulphur with oil to heated surfaces in greenhouses than with any other known substance. And there is nothing more remarkable in this than the effect that oil has in restoring calm to the waters of a stormy sea, or its soothing effects when applied to scalds and burns.

Another objection to this remedy was urged by one of the speakers (whose name I cannot recall) at the meeting of Florists in Cincinnati last summer. He said in substance, that he was at a loss to know which of the two was the most offensive—the mildew or the smell of the composition in the house. Perhaps if this question were referred to a dozen florists for settlement, who had tested the remedy, ten of them would decide in opposition to this view. And the only reason we refer to it here, is to express sympathy for those whose sense of smell is so acute that, although affording much pleasure, is at the same time the prolific source of irritation and pain. The case of this florist is not a solitary one, and the cause of annoyance is not always due to odors, in themselves offensive, for we have known people made sick by the odor of honeysuckle, wallflower, etc., and therefore it is well for this class to guard against exposure, as it is just possible they may die at any moment in either fetid or "aromatic pain."

But this is not the way to look at measures, the design of which is to mitigate or cure the maladies to which both plants and animals are subject; but rather to regard them as means placed within reach to master disease at whatever sacrifice of temporary comfort and convenience. And moreover, the full measure of virtue in the fumes of sulphur and oil may not yet be adequately understood, for if there is any truth in the rather general belief that such diseases as catarrh, diphtheria, colds, etc., are caused by minute organisms—algal or fungal,—may not this remedy be good in such cases? I have been led to take this view from remarks made by a florist who spent much of his time in greenhouses the last two winters where the oil and sulphur was freely used. And during those winters he suffered less from colds than at any former period. This may not afford

sufficient evidence that it has either preventive or curative properties, but it does seem to show that however offensive the odor might be to extremely sensitive people, it is not to be regarded as in any way hurtful.

New Haven, Conn.

[The Editor has in mind a rose house suffering from an incipient attack of mildew, and which had been seriously infested the year before. On the appearance of Mr. Veitch's paper recommending a paint made of oil and sulphur, put on the hot-water pipes, this was done to this house, and the effect in arresting the mildew was magical. The odor was peculiar, but we never heard any one suggest that it was annoying. To our mind that communication of Mr. Veitch's was one of the most valuable that has ever appeared in our pages.—Ed. G. M.]

EDITORIAL NOTES.

DESTROYING COCKROACHES.—Usually strewing powdered borax in the runs of cockroaches either destroys or drives them away. There may be situations where this may not be convenient to apply, when the following from the *Gardeners' Magazine* may be useful:

"Having suffered severely from the mischief done by cockroaches, and seeing from the inquiries in the *Gardeners' Magazine* that these pests are very troublesome elsewhere, I will briefly describe the simple remedy that I have found most effectual in getting rid of them. Cockroaches seem to be particularly fond of dry crusts of bread, and with a few of these and a biscuit tin I have been able to get rid of them. I place a piece of dry bread in a biscuit tin, which is perfectly smooth inside, and about 4 inches deep. I place the tin with one side against a wall, where they are the most abundant, or plunge to the upper edge. I am, in fact, disposed to accommodate them as far as possible, and make a ladder with a few strips of wood, which will enable them to reach the upper edge of the side of the tin. It is not a matter of much consequence which course is taken, as they will, in endeavoring to reach the crust, tumble in, when, of course, they can be readily destroyed by being dropped in hot water. I have tried to poison these pests, and also to catch them with the aid of a patent beetle-trap; but have not found either so effectual as catching them with crusts of bread and biscuit tins."

A NOVELTY IN WINDOW-PLANT CULTURE—A few days ago I had a special request to go and call upon two lady friends of mine who reside a short distance off. Their principal object was to show me a very neat and handsome tuft of horse chestnuts growing in a shallow dish, and placed on the top of a small vase in the window. On the

first glance over them they presented by their spreading palmated foliage the appearance of some new introduction of this class of plants; the leaves were of a dark healthy green, most of them consisting of five leaflets, on stems of 7 to 8 inches high, with about the same number of plants. The specimen when viewed as a whole was quite unique, and worthy of imitation. The method of management is so simple and easily performed that it brings it within the reach of every one, and adds to it a greater interest. The plan is, first to procure a shallow galvanized dish, such as are sold in the shops at 1d. or 1½d. each, or a large saucer, into which place seven or eight of the nuts. Cover them with moss, and moisten the whole occasionally with water; when showing signs of vegetation give an increased supply. When they attain the season's growth, such as when I saw them, the dish under the moss was a mass of strong, healthy roots. The progress of early growth is similar to that of hyacinths in glasses; and, although no flowers are produced, they are much more effective as a window plant.—*J. Webster, Gordon Castle, in Gardeners' Chronicle.*

ROSES IN BEDS OR BENCHES.—Correspondence in the *American Florist* seems to indicate that whether roses flower better in solid beds or benches depends as much on the man and conditions of growths as the system. Kinds subject to mildew as *Cornelia Cook*, *Catherine Mermet* and *Niphetos* may do better in benches, as the more perfect drainage is more favorable to health.

WINTER FLOWERING CARNATIONS.—In the old world *Souvenir de Malmaison* is still the most popular with florists. They do not generally practice the bench system as we do, but grow in pots. As fast as the first full crop is over they throw away the plants, and bring in a new set from the plants stored in reserve.

CHRYSANTHEMUM STAKES.—Some day when the millenium of Chrysanthemum culture shall have been reached there will be no necessity for stakes; yet awhile they are desirable, and the following from *Gardening Illustrated* will be of interest to those who desire neatness where stakes must be used:

"I will give particulars of a stake I have made to support and train my Chrysanthemums for show blooms. I get some strips of wood 1 inch square, and cut them the required length, then cut some strips of copper wire, 18 inches long; one end of these strips I bend round in a loop. I then get a fine brad-awl and make five or six holes in the stake, and, taking one of the strips of wire,

pass it through the stake and bend the other end round. It thus makes a support for two of the shoots, and by fixing four wires and one single wire at the top for the leading shoot I make a very neat stake for training *Chrysanthemums*, and if it is given a coat or two of paint it will last for years."

CARVINGS ON FUNGUS.—The large, hard fungus, called botanically, *Polyporus*, that pushes out like huge brackets from some trees, the *American Agriculturist* notes, may be turned into pretty parlor ornaments by carving on the hard upper surface.

DOUBLE BOUVDARDIAS.—The first double *Bouvardia* (Alfred Neuner) sent out in the spring of 1881, created some amount of surprise, many being inclined to think that the description of it was exaggerated, but when it flowered in this country and was found to more than fulfil the expectations formed of it, there was directly a great demand for it, and before long it was extensively cultivated. The next addition to double kinds was President Garfield, a pale pink-flowered sort, but it never became such a favorite as the white-blossomed kind. Another American-raised variety is Thomas Meehan, bright vermilion-red, but the blooms are small and not so double as those of the two preceding. It is but little grown, and appears never likely to advance much in popular favor. The next double *Bouvardias* were sent out by M. Victor Lemoine, of Nancy, and announced by him to be the result of a cross between the bright vermilion-colored *B. leiantha* and Alfred Neuner. The sorts were *V. Lemoine*, a vigorous growing kind with bright red blossoms, *Sang Lorraine* with more of a scarlet shade, and *Triomphe de Nancy*, a salmon-red kind. These are all free growing sorts, but as far as my experience extends they do not retain their foliage quite so well during winter as the older varieties. Another Continental form is *Hogarthi flore-plena*, of which, however, I possessed but a weak plant in the winter; therefore its merits could not be fairly tested. The few flowers that were developed, however, promised well, being very double, but the color does not suggest that of the old *Hogarth*, being much paler. As the flowers of these double *Bouvardias* last in perfection much longer than those of the single kinds, they are especially valuable for use in a cut state, while their size eminently fits them for the smaller arrangements of cut blooms, such as sprays, buttonholes, etc. When Alfred Neuner was first sent out a great deal of correspondence took place as to the way in which it should be propagated, some contending that cuttings of the side shoots produced only single blooms, while the tops of the main branches bore double flowers. After many experiments I was convinced of the fallacy of such a statement, as, though a few single blooms were borne during the first season, the percentage was just as great among those struck from leading shoots as from side branches. The single blooms no doubt arose from the plant being a sport from Davidsoni, a single-flowered kind. It was, therefore, just a case of reversion to the type.

The above is from the *Garden*. They do not

seem to know in Europe that the *Bouvardia* is propagated by making "mince meat" of the roots.

OLEANDERS.—Cuttings of these root freely when placed in bottles of water in a living room. The double red and the single white are common in cultivation. There are a number of other varieties in Italy, though rarely seen in the New World.

ORCHIDS FOR CUT FLOWERS.—The *London Journal of Horticulture* says:

"Many Orchids continue in flower for a great time, either from the duration of the individual flowers or their production in succession over an extended period. Some, like *Cypripedium insignis*, last for a remarkably long time when cut and placed in water, continuing fresh for two or three weeks. *Dendrobiums* of the noble character are useful for cutting, as they can be employed in bouquets and buttonholes with great advantage, though not lasting so well as the *Cypripedium*. To assist in the preservation of flowers on the plants avoid an excess of moisture in the air, and be careful not to damp the flowers when syringing. Some also remove the pollinia to prevent fertilization, and where bees are numerous this is advantageous, as the flowers of most Orchids fade almost immediately after fertilization. The list appended gives the names of a selection of the Orchids which continue longest in flower:

"Orchids lasting eight weeks in bloom—*Vanda Sanderiana*, *Oncidium Jonesianum*, and *Cælogyne ocellata*. Lasting twelve weeks—*Cypripedium Argus*, *C. barbatum*, *C. Spicerianum*, *Dendrobium Deari*, *Lycaste Skinneri*, and *Masdevallia ignea*. Lasting thirteen weeks—*Oncidium tigrinum*, *Odontoglossum cariniferum*, *O. Rossi majus*, *Sophranitis grandiflora*, and *Vanda cœrulea*. Lasting sixteen weeks—*Cypripedium Harrisianum*, *Calanthe Regnierii*, *Epidendrum crassifolium*, *Lælia pumila* Dayana, *Odontoglossum cordatum*, *O. bictonense*, *Oncidium cucullatum*, *O. incurvum*, *Masdevallia tovarensis*, *Phalenopsis grandiflora*, and *Vanda Batemani*. Lasting twenty weeks—*Epidendrum radiatum*, *O. vitellinum majus*, *Odontoglossum maculatum*, *O. membranaceum*, *Oncidium flexuosum*, and *O. linguæforme*. Lasting twenty-six weeks—*Dendrobium bigibbum*, *Masdevallia Normani*, *Odontoglossum Uro Skinneri*, and *Phalenopsis rosea*.

"The *Cymbidiums* also last a long time, and others could be named, but those mentioned will suffice as examples, though one curious instance, *Masdevallia ocothoides*, deserves notice, as a plant has been had in flower for five years."

JAPANESE CHRYSANTHEMUMS.—The following are well deserving of cultivation: *Elaine*, white; *Dr. Masters*, bright yellow and red, very fine; *Fair Maid of Guernsey*, pure white, and very distinct; *Hero of Magdala*, blood red and orange buff; *James Slater*, clear lilac mauve, very pretty; *Nagasaki*, violet, dark rose violet and golden disc, sometimes spotted with white; *Belle of Japan*,

bright magenta, tipped with silver; Cry Kang, orange red; and Sir Hare Brock, fine chrome yellow.

Mr. Fortune makes mention of one curious fact in regard to these Chrysanthemums. He states that cross-breeding is not required to produce variations among these curious forms of the Chrysanthemum, as each variety appears to possess a capacity for producing curious forms, without any necessity for cross-breeding. Once obtained the blood, and the multiplication of varieties will commence with the first generation. — *Gardeners' Record*.

ORANGE AND LEMON TREES. — A correspondent who has some seedling oranges, desires to know if they will bear without being grafted; or if they bear, whether the fruit will be good for anything.

A seedling orange or lemon will bear in time, and the fruit may be as good or even better than its parent. Grafting—or rather budding, for these plants are seldom grafted—is resorted to in order to bring the plant into early bearing. A bud from a bearing plant, will give a bearing tree at once, but a seedling usually takes many years to produce flowers or fruit.



New Tea-Noisette Rose, "Namenlose Schone."

NEW OR RARE PLANTS.

NEW TEA-NOISETTE ROSE, "NAMENLOSE SCHONE." — France and England have so far divided between them the honor of introducing new roses that have become popular with the florists. Here we have a competitor from Germany, introduced by the well and reputedly known firm of Deegan, of Kastritz, Thuringen. The fact that it is introduced by a firm of this standing is a good

point in favor of a lasting character for the rose. Deegan says that it has the beautifully formed bud so essential to a good florists' rose. They are pure white, except an occasional light blush in the open air. In long continued dull weather it sometimes assumes a sulphury tint. When the flower is fully expanded it assumes the saucer form of the *Souvenir de la Malmaison*. The flower stalks are long and slender, and though with the delicious

odor of the best tea roses, it retains the cluster-forming habit of a *Noisette*. One of its prominent traits is a tendency to bloom freely when young, in which excellent character it compares with *Hermosa*. In the open air it continues from early spring to October in constant bloom in Thuringen. The aromatic perfume is deemed unequalled in any white rose.

Deegan says in conclusion that when we think how comparatively short is the season of one full cutting of flowers on *Niphetos*, *Bon Silene* and *Duke of Connaught*, and that the quantity cut from this rose during six weeks scarcely varies from day to day, the florist may readily believe he has a good thing.

So far as we know this rose has not been

introduced yet to our country, but from the character of the firm and the description given, we believe it has merits worthy of the attention of our florists; and as in a matter of this kind early information will be appreciated, we have been to the whole cost of preparing this illustration for our readers. The cut is a half size, and by the couple of dozen buds on four sprays illustrates the floriferous or *Noisette* character of the flowers. The true *Noisettes* usually have little fragrance.

FRUIT AND VEGETABLE GARDENING.

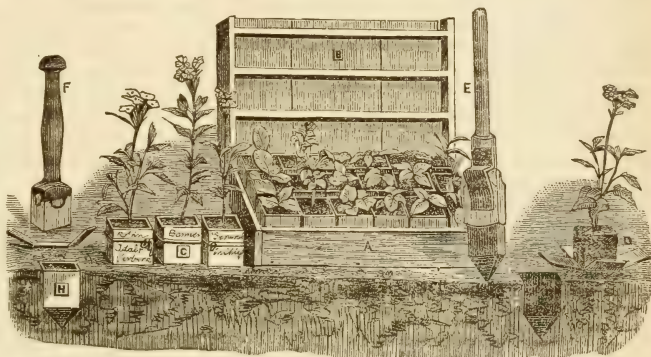
SEASONABLE HINTS.

It is often a subject of comment how long it takes the world to profit by a good idea, and the potting of young strawberry plants, preparatory to setting out in autumn, is a case in point. It is getting on toward a quarter of a century since we made the first suggestion in the *GARDENERS' MONTHLY*, that it would be well for those in the trade to prepare for such a demand. At that time it was thought the time would soon come, when the demand would arise, and inventors set themselves to prepare for it, by schemes to get the plants potted chiefly. Among others, our ingenious friend, Dr. Ryder, of Chambersburg, in Pennsylvania, invented a very cheap basket, costing almost nothing, which the grower could use and sell with the plants without missing the expense. We give here a sketch of his invention.

But nothing came of it. Few people seemed to understand that a plant that cost a trifle more than another, but gave a good crop of fruit a few months after planting, was as good as a cheaper one that took eighteen months to bring the full crop. Hence, when one had prepared the plants, there were few buyers, and the labor was wholly lost. This operated also against the use of the cheap boxes. They were no use at all after being once set in the ground. But a small flower pot could be used again, though the plant in it might have to be thrown away. So, regular flower pots are still in use for setting the runner in. But now that every body understands the vast superiority of potted plants, and even for large plantations only potted plants are found worthy of use, it is a

question whether some such a plan as Mr. Ryder's might not be considered with some profit.

It will be seen that the original intention was to include the growth of all plants intended for summer bedding. The boxes are too large for strawberry runners that would be only a few weeks growing in them, for they should be a little "pot-bound" in order to take little room, and have little weight in travel,—and we think the round form—a form like a box made for salve—for all the waste of space in packing, better than the square. Our object is not so much to com-



A Represents a section for a crate, with plants growing. B Section of an empty crate. C Plants ready for transportation in single specimens. D Showing position of ball with box open. E Tool with which to make holes in the soil to receive veneers. F Tool for setting veneer boxes in open ground, for layering strawberry plants, etc. H Showing shape of hole made by tool, with method of drainage.

mend this plan exactly, as it is to set inventors to improving on the idea, now that the "long-felt want" has arisen.

Mr. Ryder says:

"Strawberry plants, etc., that have well filled the box with roots sufficient to hold the ball of earth together, will pack secure without the veneer, and being square they pack close and carry safely.

"When strawberry runners are to be layered, the plants being cultivated in rows and the ground in mellow condition, we use the tool or dibble to make the impressions in the ground, using a second tool or plug a little smaller than the first and made square at the bottom to press the box flat down until they are even with the

top of the ground, the soil slightly compressed outside, when the plug is withdrawn, and the box is ready to fill with soil, all of which is performed very rapidly. The point below the square provides for drainage—as my experiments amply illustrate.”

It is interesting to note what a revolution this introduction of potted runners has caused in the whole field of strawberry culture, and how changed have to be the “Seasonable Hints” in consequence. The old boys can no doubt remember the warm discussions about mowing of the leaves of the strawberry in autumn, in order that the beds might bear better the next year. In those days a strawberry bed was like an asparagus bed in this, that, once made, it was to continue a number of years. The beds were solid mats of “sod,” and almost like a lawn passed over by a modern mower, after the annual mowing when the fruit was gone. But who sees a matted strawberry bed now? The potted runner, if well potted, and the bedded plants, if well bedded, will give the best crop the next spring after planting. And thus it comes about that those who strive for excellence find it pays to have new beds every year. Those who do not have the very best potted plants find the second year's crop the best, but very few in these days care to keep the same strawberry beds for over three years. The “third term” is not popular with strawberry growers now. Rotation in office prevails as a political dogma among strawberry growers. One thing is certain, that a first-class potted runner, set out in August or September, the plants one foot apart, and the rows 18 inches, with every third row 2 feet from the others to furnish a pathway for fruit culturers and fruit gatherers, will, if the ground is made suitable to the strawberry, in all probability do its best for its owner the first season after setting out.

In old times it was a caution, not to make the soil too rich for the strawberry. They would go all to leaves it was found. Under the new system it seems almost impossible to make the soil too rich, so long as the manure is thoroughly incorporated with the soil, and the ground not a mere rank manure heap. And a deep soil that will not dry out when a few hot suns shine on it, with a situation where there is an abundance of light, and yet not exposed to the full rays of the sunlight without heat—this is found to be the essence of all that is good in modern strawberry culture. The doctrine of the wearing out of varieties will rarely get an illustration from the strawberry grown under these conditions. The spotted leaf—the fungus that interferes so much with the long

continued vigor of any variety—may not be attacking plants that in the strictest sense we may call diseased. The philosopher may, with some show of facts, insist that the plants are healthy, and that the fungus is the cause of all the trouble, but we who have watched the course of cultivation through the long years past, know that “something is wrong” before the “wearing out of the variety” began.

COMMUNICATIONS.

A TREE PLANTING MACHINE.

BY WM. ZIMMERMAN.

By this mail I send you a copy of our tree planter, of which you have heard through my brother, and, as he says, expressed doubts as to its working successfully.

I have a working model which plants matches, as trees, in a box of sand, with a success that demonstrates the answer to that most natural question, “Will it work?” It will work, not only as a tree planter; but also, as a corn, or other seed, or potato planter. In this statement are also embraced celery, cabbage, beet and like plants, and sugar cane.

When the work is light, as in corn planting, two or even three planting wheels may be put on the same machine and the result or amount of work correspondingly increased.

The rate of work is about as follows: Moving at the rate of only two miles an hour, and setting one foot apart, in ten hours it will plant 105,600 plants; six inches apart 211,210; two feet apart 52,800; three feet apart 35,200. The machine may easily be arranged to plant from three or four inches apart to one or more rods at pleasure, setting trees at any desired angle to the ground.

All you now want is a well tilled field to drive in at one end and out at the other, with this machine supplied with whatever you wish it to plant, and your work will be done more thoroughly and regularly than the most painstaking hand labor ever could do it. The place filled by this machine, in its kind, is like that of the reaper over the sickle or sewing machine over the needle.

On first inspection you will be apt to think this a very complicated machine, but the reason why so many figures are given is, to show the parts clearly in their different relation to each other, and in some instances modifications are shown, and in others again some of the parts are shown

enlarged for clearness of detail, so required in patents.

Thinking that it might be of special interest to you to know about a new invention relating to an industry to which you have devoted your life, I have taken some pains to give you every point that I thought you would be likely to ask for information. I shall be very happy to answer any inquiry you may yet wish to make.

The work being about the same as that of a good reaper, the cost of production will be about the same, but owing to no competition the selling price will be governed by other conditions.

Chicago, Ills.

[There are numerous inventions to help horticulturists by those who know nothing of the business, and hence amount to very little in practice. But when such experienced and intelligent nurserymen as the Zimmermans of Buffalo, tell us they have something useful, the name alone is sufficient to command respect.

We have looked carefully over the diagrams sent with the letter, and can see no reason why the machine should not be a complete success.

As Mr. Zimmerman suggests, it is indeed the marking of a new epoch in machinery well worth a standing with the era of the reaping or the sewing machine.—Ed. G. M.]

SOME NOTES FROM RICHMOND, VA.

BY MAX.

Notwithstanding almost daily rains from May 8th to the end of the season, strawberries did very well in this section, yielding fairly and commanding moderately good prices. Subjoined are notes of a few kinds:

Crystal City ripened May 10th and continued about ten days. Though a small berry, its earliness and flavor make it desirable where there is a home market.

Triumph of Cumberland ripened next in order, commencing May 17th and continuing until June 9th. For size, flavor and length of season, this variety continues in the lead, retaining its size to the latest picking.

Sharpless matured May 19th. A splendid berry; large, highly flavored, but too soft to bear transportation. For domestic use and home market it is among the best.

Manchester ripened May 22d and held on until June 10th. A large, late, very firm berry; prolific as Triumph of Cumberland. Its pronounced

pistillate character requiring so much fertilization is an objection.

Glendale, an unprepossessing, large topped, acid berry, matured May 24th, and yielded very heavily. In spite of its acidity, it can be utilized as a late berry.

Wilson's Albany can't be spared yet. It is so firm and prolific that shippers cannot throw it aside entirely, as none of the larger and sweeter berries can equal it in firmness. This season it ripened with the Sharpless, a few days later than the Triumph of Cumberland—usually it matures with or precedes the latter. The season has been too wet for an accurate judgment of the merit of new kinds on trial in small lots.

Raspberries commenced ripening June 8th and are still on hand. The Cuthbert and Gregg are the only varieties cultivated for market in this section. Both of these have done well.

The Black Rot has improved its opportunity and is sweeping the vineyards regardless of race or color. Red, white, blue and black fare alike. Norton, Concord, Delaware, Brighton, Pocklington—in fact, all varieties—are attacked by it. Two weeks since, the prospect was fine for an enormous crop; now it is doubtful whether there will be a sound bunch left. It extends to all the vineyards we have seen in this section.

Is there anything new or old about the "woolly" Aphid that you can tell us? It is unusually prevalent on the young apple trees this summer. Has the wet weather anything to do with it?

Richmond, Va., July 1st, 1886.

THE EARLY RICHMOND CHERRY.

BY GARDENER.

In the vicinity of Philadelphia it would be hard to find a more popular cherry than the Early Richmond. There are two reasons for this. One is, that owing to the immense number of robins—which, by the way, have not been "driven away by the English sparrow"—it is next to impossible to get fruit from any of the sweet sorts. The other is, the character for regular bearing which it possesses. Besides this it is, comparatively, a small tree, fit for planting in small gardens where larger trees could not be allowed. Add to this the quality of its fruit, which, while tart, is not so much so as to forbid its being eaten from the tree, and is of the best for cooking, and there is a total of good points equalled by no other well-known cherry.

Philadelphia.

[We may add to these excellent suggestions

that those who desire the best success with this variety should graft it on the Mazzard stock. We know of trees that are over 30 feet high, with dense, well formed heads, loaded with fruit, a size and beauty we never knew on the Mahaleb or on its own roots.—Ed. G. M.]

EDITORIAL NOTES.

THE BELMONT STRAWBERRY.—This is a very handsome berry, being of a perfect egg-shaped form. It is about 2 inches long by 1½ wide near the base, with moderately scattered prominent seeds. The fruit ripens evenly, and is of a dark crimson color. It received the Wilder prize of ten dollars in 1883 for the best four quarts of berries of any kind that should have the finest form, color, and general quality. It was raised by Heustis & Son, of Belmont, Mass.

CALIFORNIA APRICOTS.—The crop in California is very large this year, and numbers have been successfully sent to the East. They were quite abundant on the fruit stands in Philadelphia during the first week in June, and excited great curiosity among numbers who had never seen an apricot before.

SAUNDERS' HYBRID BLACK CAP, No. 53—is said by a correspondent of the *Canadian Horticulturist* to be one of the most productive raspberries known. Three pints have been gathered from one plant at a single picking.

GRAFTING QUINCES ON THE WHITE THORN.—The pear grafts on the quince, and also on the English White Thorn or Hawthorn *Cratægus oxyacantha*. A correspondent desires to know whether the quince has been successfully grafted on the White Thorn.

LARGE STRAWBERRIES.—Strawberries are supposed to grow larger in the Old World than in America. The Teutonia is believed to be one of the largest varieties grown in France. Fine ones of these are 6 inches round, and rather longer than wide. It is, however, nearly as thick at the apex as at the base, so that besides measuring well there is a great deal of "meat" in the berry.

ORIGIN OF THE BEURRE CLAIRGEAU PEAR.—*Revue Horticole* says this was raised at Nantes in 1849 by Peter Clairgeau, a gardener, who sent it to Belgium.

CLEANING ORANGES.—The black smut which discolors oranges grown in many orchards has until lately been removed by washing the oranges

before boxing them for shipment. Until a few weeks ago one shipper in Orange employed as many as fifteen men at one time in washing and drying the oranges. The operation was not only expensive, but there was reason to believe that it had a bad effect on the keeping qualities of the fruit. Now, however, the fruit is cleaned in this way: A barrel is swung on two uprights, and through a trap door on the side a quantity of dry sawdust and two or three boxes of oranges are poured. The door is then closed and the barrel revolved slowly for about fifteen minutes, when the oranges are taken out, not only cleansed of every discoloration, but polished and brightened to a most tempting degree. One man can now clean more oranges than five could by the washing system, and do it better.—*Anaheim Gazette*.

EARLY ASPARAGUS.—The *Rural New Yorker* notes that where the ground is covered to a depth sufficient to keep out frost, with some rich material, asparagus can be cut earlier than when it has to wait for the frost to thaw out of the ground.

A REMARKABLE NEW VEGETABLE—A TUBEROUS MUSTARD.—The natural order, Crucifereæ, has given us a number of our most esteemed vegetables. The radish, turnip and cabbage all belong to this order, and all have varieties with tuberous roots. Now the mustard, of the genus *Sinapis*, another member of the order, has given us one in the shape of a tuberous form. It is from China, and is called *Sinapis tuberosa* in the *Revue Horticole* where it is figured, resembling somewhat small egg-shaped turnips. Its exact merits in the culinary arts have yet to be ascertained.

SOWING TURNIPS.—The "monthly calendars" of agricultural papers are very much confused as to the day of the month proper to sow turnips. Our country is too large to make any definite time safe. The best hint is, to sow as soon as the hot weather is evidently over.

SCRAPS AND QUERIES.

PINE APPLE IN FLORIDA.—A correspondent, who spent last winter in Florida, believes that the Pine apple will escape freezing seven years in ten as far north as Eustis, and can be raised with less trouble than cabbages. A bed once planted will yield for many years.

MURDOCH'S BIGGAREAU AND ROSTRATER BIGGAREAU CHERRIES.—We have the following note with fruit from Messrs. Murdoch: "This accompanies prepaid samples of two new cherries that

we expect to put upon the market in the Fall of 1887—Murdochs' Biggareau and Rostraver Biggareau. They ripen after our other good varieties are gone, and we consider them valuable on that account aside from their large size and fine firm quality. We have no reason to doubt that they are new varieties, but at the same time wish your opinion on this point also. The Murdoch Biggareau becomes almost black when fully ripe."

[It is next to impossible to pass with certainty on the distinctness of cherries from others already named, from samples on a plate. They are too numerous to remember, and no system of classification has been found, as there has been among plants, by which a reference to a "monograph" will help us. It is safe only to say, that they appear to us to be distinct kinds, and they are large and fine fruit, and we should not hesitate to put them into the trade as good and desirable kinds.—Ed. G. M.]

WOOLLY APHIS ON APPLES. BLACK APHIS ON CHERRIES.—We have before us two letters—one from New York, talking of having to give up cherry growing because of the Black Aphis, and one from Virginia, similarly disheartened because of the aphis on the apple tree. Each inquires, what are we going to do about it?

Now these insects can readily be killed; but the question for the nurseryman is, can it be done cheaply enough to enable him to sell his trees in competition with those who have no such labor to spend in being free from these insect troubles?

There seems reason for thinking they can be much more easily destroyed than people generally believe.

It must be remembered that insects of the Aphis family suck the juices of plants. Not eating as beetles do, they cannot be destroyed by poisons

like Paris green. But they have to be destroyed by closing their breathing apparatus. Oily liquids will do this; and in no form better than by kerosene emulsions recommended by Prof. Riley and others. The earliest of these methods was first published in our magazine, contributed by Mr. Brown, of Princeton, New Jersey. Twenty pounds of lime and one gallon of coal oil, mixed with one hundred gallons of water, is allowed to settle and become clear. In this way oil will mix with the water, and can then be used over leaves with a syringe, or poured in around the roots of the young tree when the insects are there.

If one has but a few trees, a syringe and a portable vessel of water would be all needed. But a nurseryman with acres of trees could not stand this expensive hand-labor. But why cannot a water-cart arrangement, drawn through the rows of trees, with a force pump attachment, or even a gravity power be adapted, that would fully answer all purposes? Surely the brains that invented a mowing or sewing machine, and has now given us a tree planter, ought to be equal to a task of this kind?

We may add here that there has been a singular neglect in American horticulture of the garden engine for cultural purposes. In all first-class European gardens a wheeled engine for forcing water is deemed as essential as a wheelbarrow. Some time since we advised a lady living near a large city, who was annoyed by the skeletonizing of the leaves of a favorite elm tree by the leaf-beetle, to fire a solution of Paris green over the tree. She wrote afterwards in reply that she could not find a wheeled garden engine in any agricultural implement store in the city. Syringes and little hydropulps were the best she could command.

FORESTRY.

EDITORIAL NOTES.

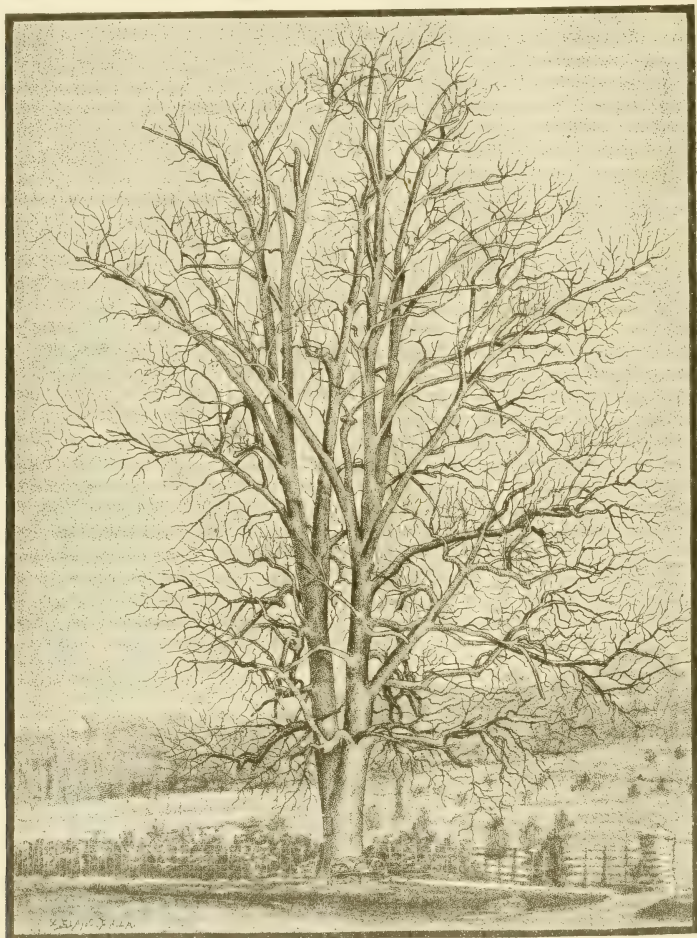
A FINE PIG-NUT HICKORY.—As we read in the books, the Pig-nut Hickory is "a native of the forests of the United States and Canada, usually growing about 60 feet high, but occasionally reaching 100." On the grounds of Geo. W. Childs, the proprietor of the Philadelphia *Public Ledger*, we saw one some time since, which on measuring

we found had reached the extraordinary height of 113 feet, and had a circumference, 5 feet from the ground, of 12 feet. This grand monarch of its race so impressed its majesty on us, that we have taken its portrait, which we give herewith. It will be seen by the stumpy character of some of its upper branches, that it has seen its best days, and that it is now on its decline; though with the care it is getting from its owner, it will probably

take over a hundred years yet, before it is finally gathered with the fathers of its race.

It may be noted that the hickories are closely related to the walnuts, which have the scientific

the former is Latin, the latter Greek. There are no hickories in any part of the world but North America, and it is to be regretted, perhaps, that some name connected with our own country had



Pig-nut Hickory.

name of *Juglans*. Our hickories were also called *Juglans* in the early botanical history of our country. Nuttall first perceived their distinctness and made a new genus under the name of *Carya*. Both names mean little more than "nut," but

not been thought of for them. The species, however, have English names, characteristic if not elegant.

The present species is "Pig-nut," from, we have always supposed, the unshelled fruit resembling

the face of a pig. In most cases the husk remains tight over the nut, and tapers down to the stalk like the nose of a pig. This character is not however constant, and some pig-nut hickories split the shell and permit the nuts to fall out, as in other hickories.

THE BEST FOREST TREES FOR AMERICAN PLANTERS.—It must not be forgotten that America is a large place; when we talk of American forestry, we may have in mind any thing from a palm to a pine tree. There are doubtless spots in this large place where the native trees of England or other places on the continent of Europe would prove quite as profitable as they have been found in Europe. In other places they may not do at all. In some spots our native trees will be the most desirable; in other, the trees of Europe, or even of Japan, will do better than our own. When we read that this or that tree is no use for American forestry, it simply means that the right spot has not been found for it. When the West smarts under its general failure with the larch, it does not do to say the larch is a failure in America. But the failure proves that we may not expect to take a tree, by nature an alpine, and have the best success with it on low, rich prairie farm land. As the man who despises book "larnin'" says, "it is contrary to nature."

ALDER WOOD.—The Alder on the northwest coast grows large enough to make canoes, and in the north of Europe the species indigenous grow to a large size. In our efforts at timber culture in the near future there will be many wet spots in the Northern States, or in elevated regions, that will be just suited to this tree. It will be useful to place on record the following, from the *London Garden*, as to the uses of Alder timber:

"The Alder in the market, as regards price generally, gets classed with the Birch and the Poplar, and consequently does not command a very high figure. For its class, however, it is a very useful wood. According to old writers, it has a quality which appears to be but little regarded at the present day, viz., that of enduring a long time under water or in moisture. It is stated that in the past it has been considerably used for piles. Assuming its properties to be as good in this respect as has been represented, there would now be a great difficulty in getting a supply of wood large enough for works of any magnitude, and whatever it may be worth in this direction, it is more likely to be used for small works of a private nature than in anything where material would have to be bought off the market. The Alder has been suggested as a suitable wood to cultivate for pit and mining props. Looking at the present position of the supply of this commodity, it does not seem as

though there is much chance of Alder growing for propping being successful; the idea may be recorded for what it is worth for districts where propping is not very plentiful, and where the soil is not fit for the growth of the woods which are more commonly used. In the districts where they are required, Alder of a suitable size is sometimes prepared for hop poles, but on the whole it is more the wood for the turner than for any other handicraftsman. The smaller wood in the turning industry goes for bobbins, of which vast quantities in the shape of cotton reels and similar articles are annually consumed. Another use of a similar nature is the manufacture of brush backs. The toy broom of the drawing-room and the scrubbing broom of the scullery are alike prepared from this wood. Another use of the Alder, which was referred to some time ago by a writer, is the manufacture of clog soles. Here, in the south, very little of this work is seen, but for the soles of patens it is occasionally cut up. For charcoal burning the Alder is regarded as of considerable value, and in some districts the better portions of the wood are turned to account for the staves of dry casks. As it has been stated, the wood is more generally grown in the form of poles than in that of timber, so the majority of the manufactures from it consist of small articles. Where the tree grows to what may be regarded as a timber size, the uses to which the Willow and the Poplar are generally put would as nearly as anything represent what may be ventured upon with the Alder. It is a wood which is spoken of as being used for wheelwrights' work, such as the lining of carts and wagons, but where Elm is to be had, and at the present prices, it certainly seems unadvisable to use Alder. For work where a soft and non-splitting material is essential, it may now and again be advantageous to use it, but the general lines upon which its admissibility may be determined are those previously given."

FORESTS IN IRELAND.—Ireland was once a vast oak forest. It has been wholly denuded of timber. The climate has not changed. There is as much rain as ever. But it is proposed to re-forest portions for economic through not for climatic reasons. It has been estimated that the cost in that country for seedlings would be from \$20 to \$25 per acre. For trees requiring holes, \$30 to \$35 per acre. In about forty years timber fit for use could be cut, and an acre estimated then to be worth \$300 per acre.

THE MONTEREY PINE.—*Pinus insignis* does not endure the winters of the Atlantic States, but finds itself at home in the climate of England, where great hopes were entertained that it would be valuable for forestry purposes. It proves soft—but equal to Scotch Fir.

LARCH DISEASE.—Whole plantations of larch in Great Britain and Ireland have been destroyed, presumably by some fungus disease.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

GOPHER-ROOT.

BY DUDLEY W. ADAMS.

There is a very curious tree quite common in this vicinity which I have never seen noticed, or if I have seen it, it was so obscured by unintelligible name and description that I did not recognize it. This tree is known among us simple rustics as "Gopher-root." This quite expressive but not very elegant name enables us in our innocence to understand what we are talking about, though really it is not a root at all, but the wide spreading branches of an underground tree.

This tree is practically without any trunk, it being so short that it does not reach to the surface of the ground. The branches run as nearly horizontal as the formation of the surface of the ground will permit, and usually from 2 to 6 inches below it. These underground branches send out side branches and forks like other trees, but all maintain their subterranean position. Some of these trees have a total spread of branches of 80 to 100 feet. The leaves and blossoms are borne on slender annual or biennial twigs that are thrown up thickly from the younger branches and grow to a height of 6 to 10 inches. Enclosed I send one of the largest with leaves and blossoms.

It seems a pity that such a curious and worthless tree should lead a life of obscurity among rustics with no name but "Gopher-root;" so if it has not already a scientific name I would suggest that it be called *Gopherrootum Procumbens Subterraneum Floridiana Adamsii*. Such a name as that would at once place the lowly tree on a high scientific plane and all indefiniteness of nomenclature be removed. By the use of such a name very few people would ever learn to speak it, and thus in the limited circle of scientists there would be no confusion of names. Then another thing occurs to me. When one of us poor plow joggers is plowing and gets inextricably entangled in these underground branches (from $\frac{1}{2}$ to $2\frac{1}{2}$ inches in diameter) there is nothing in our simple vocabulary that will give full or even approximate expression to our thoughts. When thus entangled, with a broken harness, and angry mule and a thunder shower at hand, what a relief it would be

to pronounce that name with a ferocious accent on the antepenult! What effect the use of such language would have on the mule is of no importance, for mules are accustomed to a good deal of rough talk in plain English, and if that does not hurt them we need not fear damage from feeble tongues.

Tangerine, Orange Co., Fla., June 19, 1886.

[Unfortunately this must not be an "Adamsii," for Michaux is ahead with a prior name—*Chrysobalanus oblongifolius*—Linnæus having adopted the generic name for the cocoa plum of the West Indies. The name is Greek—*Chrysos*, golden, and *balanos*, an acorn, or "plum."

We never knew as much about the plant as our correspondent's humorous letter discloses, and so give it in full with his inquiry for its name. Wood in his "Class Book" tells us that "it grows in the pine barrens of Georgia, Alabama and Florida, and is a shrub with a slender prostrate stem or woody rhizome, sending up short branches of 8 or 12 inches," and this is about all the account that we know of in any published work.

The West Indian one is known as *Chrysobalanus Icaco*, and is called the cocoa plum. This is said to grow also in the Everglades, and to make there a tree with dense, glossy, deep foliage, with the fruit as large as a plum but varying in color from milky white (cocoanut-flesh color) to red and black. The fruit of this species is said to be quite pleasant eating, but we know of no account of the fruit of this dwarf kind.—Ed. G. M.]

A RARE MONSTROSITY.

BY ERNEST WALKER.

Recently while admiring an unusually large "spike" of the *Yucca filamentosa* and courting the acquaintance of the little dusty-millers which haunt and seem to operate these fairy flower-mills, I came across one of the less common forms of floral metamorphosis and of proliferation, one type of which is where a pedunculate branch springs from the head of a flower, as on the rose for instance, where a branch rising from the centre of the flower is terminated by another rose a few inches above the first one. This variation, though less common, is by no means rare. They often occur in the greenhouse, while the more

ordinary forms of transformation are of as common occurrence as single flowers.

Something more of a rarity is when the "condensed branch" attempts to develop the side buds, and produces flowers in the axils of its petals. This was the nature of the specimen we lately found on the Yucca. This flower consisted of a double calyx, both fully formed and pure white. A corolla with one additional petal, somewhat crumpled and revealing a stage of development midway between stamen and petal; the normal number of stamens, six, and an ovary with one of its three prominent carpels missing. What we call double calyx may have been double corolla, but there was the natural number of stamens present. The most prominent feature, however, was the development of a pair of good sized and perfect flower buds in the axils of two of the segments of the exterior calyx, and one at the base of the third sepal.

Thus was produced a kind of compound monstrosity, exemplifying several principles of morphology—*multum in parvo*. The flower was also remarkable in some other respects. In the augmentation of spirals in the flower this multiplication more commonly occurs among the andrœcium, and in this kind of proliferation, which in itself is rare, such buds are more commonly found in, the axil of stamen or petal.

Nevertheless such pine-knots all help to kindle bright fires and throw light in the darker recesses of nature's abode. They are not imperfections or blots upon the pages of nature, but punctuation marks to aid science in interpreting her wonderful manuscript.

New Albany, Ind., June 20th, 1886.

CAUSE OF THE POTATO DISEASE.

BY C. D.

I see by your June number that in America as in England a belief exists that the potato disease is caused by *Peronospora infestans* and not that the fungus is the effect of disease. This, the first cause, had done its deadly work. Then the *Peronospora* as one of nature's scavengers, clears away the dead matter. On the same principle the worms eat a dead body. Men of science still contend that from 1845 down this fungus is the sole cause; though practical and experimental men are against them; and all the successful experiments that have been brought to bear in endeavoring to cope with the disease militate against them also. I should like to ask where the

Peronospora was previous to 1845, and how it existed? It certainly did not exist on rotten potatoes for there were but few about; and also how the vast mass of *Peronospora* that were in existence the first ten years of the disease live now, and upon what do they feed since natural remedies have been so effectually employed, not to destroy the *Peronospora*, but to restore the potato and to give the fungi no further work to do? Where are they now? If fungi be the cause of the disease, they certainly must be "blind to their best interests" in not now making further attacks upon the delicious morsels that are all around them and are much more abundant than in 1845. No, it is the carrion they want, and not the potato in its healthy state.

It was not the *Peronospora* that we had to contend with in the early times of the disease, but the constitutional weakness of the potato which threatened its destruction. The men who have been looking through the microscope have done nothing toward the alleviation of the distress; but the sympathizing practical men fought with debility and snatched the potato from entire destruction.

Much has been written from time to time about the wearing out of races and I suppose it is a doctrine which few will deny, for all nature is hastening to decay; even the world itself is getting older. It is also an admitted fact that you may prolong or cut short the existence of animal or vegetable life by the way it is treated; and it will not appear at all wonderful to the thoughtful mind, on looking back to the history of the potato and its treatment during the last quarter of a century of its existence before it succumbed to the disease, that it certainly could not much longer bear the immense strain upon its constitution to which it was then being subjected; in the shape of gross feeding; its high cultivation; its unnatural treatment; and all the greed of the exacting cultivator with his determination to have the "last pound of flesh." Even the quality of the sets that were then used for planting for the next season's crop, must have produced the mischief in time if nothing else had accompanied it. Men who lived in those days will not fail to remember the exhausted state of the sets that were used; how the spears which were the very vitals of the potato were run out and matted together, and the poor potato reduced down to a skeleton and made to appear like pieces of dried sponge, instead of plump healthy sets. Surely those who can remember these things must confess that man and not "the worm" was the cause. I venture to affirm that if we were to treat

any other like kind of vegetable that is propagated by the bulb or tuber, such as the tulip, the hyacinth, or the narciss, pretty similar results would follow. In fact, all vegetables and animals when pressure is put upon them like it was upon the poor potato, must, "like riding a free horse to death," finally succumb to its treatment; for all ought to be impressed with the important lesson that if we break nature's laws, we certainly shall sooner or later have to pay the penalty.

It is now generally conceded that Americans and the English have had their labors richly rewarded, for by careful fertilization combined with patience and perseverance we have produced a new and stronger race, which is not only more impervious to the disease, but, as a rule, is far ahead of the old worn-out sorts—both in quality and productiveness—for where would you find in 1840 such splendid sorts as the Beauty of Hebron and the White Elephant?—sorts not confining their merits to one part of the season in particular, but to every part,—and sorts too, that will always reward the cultivator, both for quality and productiveness,—besides the many other fine sorts that follow hard after them, sufficient in number and variety to suit the different soils, and the different countries wherever the potato is grown.

This indomitable perseverance of the two nations has left the *Peronospora infestans* very little to feed upon, and has almost chased it out of existence so far as the dead potatoes are concerned. How different is it now to the first ten years of the disease. In good seasons it was bad enough, but in ungenial seasons, when the disease was hastened by inclement weather, the crops were scarcely worth digging, and when dug the tissue was so vitiated by traces of the disease, that it was rarely worth eating. But what a marvellous revolution thirty years have produced! and all this time the poor *Peronospora* must have been sadly beaten back, and terribly put about for want of its favorite food.

I am pleased to find that my observations are in perfect accord with the essay read before the American Society of Florists, and which appeared in the GARDENERS' MONTHLY for June 1886, page 169. The first observations of the essayist contain the gist of the whole matter. He says: "very few plants are attacked by insects or disease when in vigorous health, it is only when the vitality is impaired, or the growth checked by any cause, that they strike." So that it is only sensible and right that we should blame the real cause of the mischief.

I have always been thankful that I spent some years of the best part of my life in writing and lecturing on this important subject, and battling the various errors that prevented the public from arriving at the real cause of this disease, thus adding my mite to the enlightenment of the public mind in reference to it; so that at the present moment I am more than rewarded by seeing the cultivators of the root all moving on in the right direction, and all taking care of the seed tubers. Planting at suitable times and in suitable soil, and striving to preserve its health and vitality,—not taxing them to their utmost limits—and treating them more in accordance with their natural habits; and striving still, by adhering to natural laws to obtain a more vigorous and healthy progeny. I am exceedingly pleased to find that our united efforts have been crowned with abundant success.

How difficult would it be now in this time of comparatively healthy potatoes to find the *Peronospora*, or even its resting spores in any quantity? But if once more, through maltreatment, we were to again break up the constitution of the potato and cause it to become debilitated and diseased, we should soon find the fungus in sufficient quantity to carry on the sanitary work as heretofore, "for wheresoever the carcass is, there will the eagles be gathered together."

Ryde, Isle of Wight, England.

[The Editor may be pardoned for saying in regard to this communication, that it comes from one who, without any capital but intelligence and good judgment, has become one of the best known, in his own country, among successful nurserymen. Near, if not perhaps on the grounds of which he had charge in 1845, the potato disease made its first terrible appearance in Europe, and possibly no one gave the disease a more careful study from a practical point of view, than C. D. Every one at that time predicted the total disappearance of the potato from cultivation. C. D. was then an enthusiast in his views that utter indifference to the quality of the seed potatoes—sprouting them in the cellars and planting the shrivelled pieces called sets, which had thus to make a new start with sprouts in life, had much to do with disease,—and contending that when we should come to have more common sense views of preserving seed potatoes, potatoes would be as abundant as ever again. Now, when he must have passed his three score and ten, it is no wonder that he feels a glow of satisfaction, that his advice has been followed, and his pleasant predictions have come to pass.—Ed. G. M.]

EDITORIAL NOTES.

THE STRAWBERRY FUNGUS.—The strawberry fungus, *Ramularia fragaria*, which causes the misnamed "sun-scald" on strawberry leaves, and eventually causes varieties to "run out," is not nearly as bad in the vicinity of Philadelphia as usual. The cool moist season is unfavorable to its development. In one respect "sun-scald" comes near to a relationship to the disease though a fungus is the actual agent, for it is the heat and drouth of a climate or exposure for which the strawberry was not intended, that first enervates it, and gives the fungus a chance to grow. Fungi will, we are convinced, attack the healthiest vegetation at times; at other, low vital power encourages fungus attacks, and thus it is with the strawberry and other Northern fruits in more Southern climes.

A FLY-CATCHER.—A daily paper says: "A mosquito-catcher (*Drosera dichotoma*) is among the rare insectivorous plants in the Botanical Gardens at Washington. Nature lost a big opportunity to supply a long-felt want when she failed to make this style of flora indigenous to the Atlantic coast."

But nature was not quite so oblivious to America's needs, for there are *Droseras*, or as they are popularly called, sun-dews, along the Atlantic coast, that catch mosquitoes and other insects as freely as this Australian relative. *Drosera filiformis*, abundant in New Jersey, is a veteran catcher, and understands its business thoroughly.

NON-BEARING STRAWBERRY PLANTS.—The English gardening periodicals are still arguing whether there really are bearing and non-bearing strawberry plants; some contending that their strawberry beds occasionally become barren. The English climate is probably more favorable to the production of perfect stamens and pistils than America. Here it would be comical for any one to argue that there were not plants with sexes separate in the strawberry. Purely pistillate strawberries are among the commonest of experiences, in a wild as well as in a cultivated state.

SEEDLESS FRUITS.—"Fruits of all kinds may be grown without seed by reversing the cion—rooting the top end of the cion. To do this, you can bend the cion to sprout down, and cover it with dirt, and after rooting cut loose, and let the root end be up. Apples are grown without cores, peaches without seed, and grapes, plums, cherries, blackberries, and every kind of fruit may be grown without seed by simply reversing the cion. Persimmons without seed are not to be excelled by any other fruit in this country when dried. Ap-

ples cooked without cores are delightful. Grapes have been raised for five thousand years without seed. Peaches dried whole without seed would be a hundred times better than those shaved up and dried. The seedling of cherries has been a great trouble to cooks."

As the above appears in a religious paper, the *Christian Advocate*, we should say there is, after all, a decided conflict between religion and science. Any one who has ever had a raspberry or gooseberry root from the tips, will know whether rooting at the top end of a "scion" produced seedless fruits.

SCRAPS AND QUERIES.

APPLES ON A GRAPE-VINE.—A Philadelphia correspondent says: "The imperfect specimen of an abnormal growth on a grape-vine I beg to hand you, and am sorry that I could not hand it to you in a better state of preservation. The fruit herewith is one of a cluster of three, and in their growing state were a fair specimen of apples. Near by the vine stands an apple tree, bearing an indifferent fruit and growing in clusters of two or three apples, the same as appeared on the vine. The fruit herewith became detached from the upper joint of the vine."

[Entomologists who are well informed, and understand that these "hickory-nuts," "apples," and other things on the grape-vine, are simply galls from an insect, will smile at the suggestion that the apple had aught to do with hybridizing; yet eminent men of science have believed that smooth apples are produced by growing near Russet trees, and that apple trees will bear pears sometimes by the two growing contiguous.—Ed. G. M.]

WILD FLOWERS AT RACQUET LAKE, N. Y.—A correspondent, while ordering his magazine sent for the summer to Racquet lake, remarks that he knows of no spot "so rich in botanical treasures." As our correspondent is a Jerseyman, where flowers are varied as the stars in numbers, New Yorkers should be proud of this compliment to their little-lake region.

THE PIPSISSIVA.—"Mrs. S. T.," Washington, D. C., notes that the young seed vessels of this plant, *Chimaphila maculata* of botanists, have "the odor of young green peas."

WILD SWEET WILLIAM.—"Mrs. S. F.," Washington, D. C., notes: "Please tell me the name of the beautiful wild flower I send. Unfortunately it has faded, but I suppose enough is left to answer

the purpose. I am from Central Alabama, where this beautiful flower does not grow; for though only a weed here, it is beautiful. I am no botanist of course, but a close observer and successful grower of plants—have read your 'Native Flowers and Ferns,' with great interest. Before me is the number with 'Phlox reptans,' or as we call it, 'Wild Sweet William,' one of our commonest wild flowers, blooming in great profusion when the 'bird-foot' (or, as we call it, 'crow-foot') violet blooms. When I read your book first, several years ago, I made a running com-

mentary on the habits of such plants as I knew best."

[The "Wild Sweet William," to the Creeping Phlox, is a new popular name to literature, we believe. The flower enclosed is *Echium vulgare*. In the Old World, where it is indigenous, it is known as Viper's Bugloss, and in Virginia, where we found it several years ago, naturalized as abundantly as the ox-eye daisy is with us, we found the farmers calling it "Blue Devils." It is too bad that so handsome a flower should receive so disreputable a name.—Ed. G. M.]

LITERATURE. TRAVELS AND PERSONAL NOTES.

EDITORIAL NOTES.

BRIEF AND EXPRESSIVE NAMES FOR FRUITS AND FLOWERS.—Agricultural exchanges are still discussing the propriety of short and expressive names for fruits and flowers. It seems strange that there should be any dispute about it. The parent of a Spanish Prince may give the child the names of all the holy saints in the Roman calendar with those of all his illustrious ancestors added. There is no disputing the right, but he will be only Don Pedro first or second or so on, when he comes to reign.

So the fortunate father of a new fruit may christen it Junkin's Noblest Triumph On The Great American Continent Seedling Strawberry; it will become simply The Junkin, and even Junkin without the definite article, when it comes to rule in popular estimation; if it comes to be a king at all. "Strawberry," "seedling," "continent," and all the items get rapidly dropped; and when the Great Junto—the American Pomological Society—comes forth to welcome the new comer to royal honors, to "Junkin" only is the homage paid. Some who stand on abstract right can make a good case that all this is wrong; but for all this it ever will be since Col. Wilder started the fight for brevity and good sense. It is one of those cases in which we think the poet's expression that "whatever is, is right," comes down with full force.

Let whoever will give his "seedling" a name a yard long. Let us not dispute his right. But the one who favors his discovery with a short, sharp

and decisive name, will win the greatest battle in popular favor, and become the popular hero.

THE ROSE OF SHARON.—Following Miller, the *Althæa* is generally regarded in America as the Rose of Sharon. We give the following, from *Gardening Illustrated*, as showing that no one yet seems certain what plant was referred to. It has taken us nearly two thousand years to discover that the Bible has never been accurately translated—and even since the last "revise" a learned commentator has discovered that in cases where the Bible reads "rose" it is just as likely "reed" was the original word. Still, we are all interested in these discussions, and love to note what people say:

"The question put by 'St. Michael's' was for the botanical name of the 'Rose of Sharon.' We must then first determine whether the St. John's Wort or the Rock Rose is intended by that name. With both I have been familiar from my youth, and there is little doubt but that the name 'Rose of Sharon' is popularly applied to the St. John's Wort; that Mr. Miller is wrong in calling it the *Hibiscus Syriacus* in his 'Dictionary of English Names of Plants,' and that the friend, Mr. Editor, 'at your elbow,' was right in insisting that the Rose of Sharon is the *Hypericum calycinum*; it is certainly so known in the trade. The *Hibiscus Syriacus* is a very different flower, and belongs to the Marsh Mallows, order *Malvaceæ*, and is synonymous with *Althæa frutex*. The next point is the flower referred to by Solomon in his 'Song of Songs,' rendered in our authorized version—'I am the Rose of Sharon.' The first competitors would seem to be the St. John's Wort, and the Rock Rose, *Helianthemum vulgare*, a great quantity of which grows in the plains of Sharon. The

Hebrew word Chabatsseleth, translated 'Rose,' is never applied to the Rose proper—the etymology is in favor of its signifying a bulbous rooted plant. The Targum has Narcissus, the Vulgate rendering being 'flos campi,' flower of the field, whilst 'Sharon' might be translated 'plain' or 'field.' In the revised edition of the Bible the rendering is—'I am a Rose of Sharon, a Lily of the Valley; and if we adopt the Vulgate rendering, and read it as—'I am a flower of the field, a Lily of the Valley,' the Narcissus of the Targum is clearly the flower intended, whilst the association of the 'Rose' with 'the Lily of the Valley' implies that some flower other than the Rose proper, the Hypericum, or the Helianthemum, is intended. The Narcissus is plentiful in the Plain of Sharon and elsewhere, and is a very favorite flower in the East, and whilst it is uncertain what is really meant by the Hebrew Chabatsseleth, the weight of opinion is in favor of a bulbous rooted plant, and of such the Narcissus appears the most likely; and, though reluctant to give up my old friend, the St. John's Wort, as 'the Rose of Sharon,' I think it is not the flower referred to in the Song of Songs."

EDITORIAL COMPLIMENTS.—These are often neatly put, though outsiders have reason to regard them suspiciously. One of our contemporaries publishes a letter "not intended for publication," in which the magazine is regarded as "the best horticultural journal in the world;" and the Editor appends a note, no doubt "not intended for publication" either, that his correspondent is "a scholar and a gentleman."

NOTES ON THE HISTORY OF FRUIT CULTURE IN GEORGIA.—The *Augusta Chronicle*, celebrating its one hundredth year, gives a history of the industries of Georgia. In relation to fruit culture, we learn that on the income of De Leon, De Soto and others in the Mississippi region, the Indians, notably the Cherokees, were found to be first-class fruit culturists. The apple and peach they obtained from the whites—these they planted and cared for. They knew nothing of grafting, or propagating in any other way than by seed. The best Southern apples are varieties originating in Indian orchards. The landing of the Spaniards in Florida brought the peach to the Indians. The Columbia is one of these Indian peaches, and Crawford's Early and Late are Northern peaches, mixed with the "Indian" or Spanish breed of peach.

The Warren grape was a chance seedling of *Vitis æstivalis*, found in Georgia fifty years ago, and is still unequalled by any newer discovery. The Black July and Devereaux are also still indispensable—all first-class wine grapes. The Le Conte pear is also a Georgia production, filling

the pockets of pear growers as no pear has ever done. The Japan persimmon has found a congenial home in Georgia—some fruit sent to New York last fall bringing \$16 per bushel. The State Horticultural Society was started in 1858, and has given a great impetus to Georgia fruit growing.

INTRODUCTION OF THE MOSS ROSE.—We have referred to many old authorities, and the results of our search are that Parkinson in his "Paradisus," published in 1629, Rea in his "Flora," published in 1665, and Banhin in his "Pinax," published in 1671, enumerate many roses, but the Moss is not among them. It was introduced or raised in Holland probably at the close of the seventeenth century, for Dr. Martyn, in his edition of Miller's "Gardeners' Dictionary," says it is in Furber's catalogue in 1724. We have seen a copy dated 1727; it is entitled "Catalogue of English and Foreign Trees Collected, Increased, and Sold by Robert Furber at his Nursery over against the Park Gate at Kensington, near London." Faulkner in his "History of Fulham" says that Mr. Rench was the first to introduce the Moss rose into this country, the original plant of which is supposed to have been brought from Holland. Rench lived at South Field Farm, near Parson's Green, a farm possessed by his family for two centuries. He was buried in Fulham churchyard, where there is this inscription to his memory on a headstone: "Under this stone are deposited the remains of Nathaniel Rench, late of this parish, gardener, who departed this life Jan. 18th, 1783, aged 101 years." So he may have introduced the rose before 1724, for in that year he was forty-two years old. The Moss rose was first portrayed in the "Botanical Magazine," plate 69. It is described as the *Rosa muscosa*, or Moss rose, and the plate is dated December, 1788. Mr. Curtis observes that, though Miller thought it a distinct species, Linnaeus considered it only a variety of *Rosa centifolia*.—*Journal of Horticulture*.

VARIETIES OF PERFUME IN THE ROSE.—In roses there is a national interest; their scents are especially interesting, and, I am sure, to none more so than to our lady gardeners, whose delicacy of discrimination in matters of perfume will be of the greatest assistance to us in discussing this subject. The well-known perfumes of mignonette, musk, heliotrope, verberna, violet, orange-blossom, and others, are highly prized by most people; but the same peculiar scents are maintained by them all the world over; while the rose, queen of all, is unsurpassed in the variety of its perfume. Having,

during many years, given much attention to this subject, I shall now endeavor to make a classification of distinct types of rose scents; asking your readers to bear with me in this, the first attempt that has ever been made of this kind. I would here enumerate some seventeen varieties, beginning with the well-known Sweet Briar: 1, Sweet Briar, the garden variety; 2, Moss Rose-bud scent, common Moss and others of that family; 3, Austrian Briar, Copper, Austrian, and others of that section; 4, Musk Rose, Narcissus, Old Musk, and others; 5, Myrrh-scented, Ayrshire, splendens; 6, China Rose scent, an astringent refreshing scent, old monthly China and many others; 7, Damask Perpetual scent, Rose du Roi, &c.; 8, Scotch Rose scent, the early double Scotch; 9, Violet-scented, White Banksia; 10, Old Cabbage-scented, the well-known double Provence; 11, Otto Perpetual scent, Charles Lefebvre, Madame Knorr, &c.; 12, true Perpetual scent, Charbrilland, Pierre Notting, &c.; 13, Old Tea scent, the old yellow Tea or Magnolia Rose, and others—almost unpleasantly strong for some tastes; 14, Sweet Tea scent, Goubault, Devoniensis, Maréchal Niel, &c.; 15 Hybrid Tea scent, La France; Bessie Johnson is closely allied to this; 16, Nectarine or fruit scent, Socrates, Jaune Desprez, Aline Sisley, &c.; 17, a new variety which I would name the Verdier scent, represented more or less by all the Victor Verdier hybrids, such as Eugénie Verdier, Castellane, Countess of Oxford, Marie Finger, and many others of recent introduction. Some compare this slight but peculiar perfume to that of apples; I think it might be described as a delicate rose scent, with a "suspicion" of turpentine about it, pleasantly blended. The petals of the highly-scented varieties have on their inner surface minute perfume glands, or vesicles, containing the highly volatile essence, under the microscope distinctly visible. Those on the foliage of Sweet Briar and sepals of the Moss rose may almost be seen by the naked eye. So that with the microscope and good olfactory practice, the interesting question, "Which are the sweetest roses?" may be readily settled. To my taste, and by the same rule, the following are the most deliciously and powerfully scented of all roses, viz.: La France, Goubault, Devoniensis, Maréchal Niel, Bessie Johnson, Madame Knorr, Pierre Notting, and Charles Lefebvre. As a rule nearly all the dark roses are sweet-scented. To unstop Nature's finest bottle of rose-scent, remove the cap in hot weather from a "pasted" full-blown bud of La France, or even the Old Cabbage, and the flower

will instantly expand, throwing out a surprising volume of fragrance. Roses after they have been gathered a short time, appear to give off more perfume. Again, roses blooming under glass usually give off more than those of the same kinds blooming in the open air.—*H. Curtis, in Garden.*

THE SWEET LOCUST.—No one would object seriously to a common or English name for plants, if a plant once named would stay named; but it is found by experience that one person feels as much authorized to give a common name as any other, and hence a crop of new names rise every year, that no one can keep track of. In the East they have got to calling the Honey Locust "Sweet Locust"—and only that we have to guess that honey may be sweet, no one could guess what they mean.

THE HONEST AND THE RASCALLY TREE PEDLAR.—Mr. C. E. Barnes, in an admirable address recently given before the Summit County (Ohio) Horticultural Society, draws a proper distinction between the cheat and the fair dealer among tree pedlars. In regard to the frauds, he makes the same point we have always done, that it is no use to try to help a man who does not read the papers. It may, however, serve a good purpose to note just how our ignorant neighbors are cheated. We may laugh at them, as the cost does not come from our pockets.

"Yet I would not have the tree agent entirely wiped out of existence, because he is sometimes a blessing. Many are indebted to his importunities for much of the fine fruit that they have. The wily tree agent who knows no law but to sell, makes his raids upon those who do not attend horticultural meetings or take horticultural papers. The victim believing himself to be invincible, takes a look at the highly colored pictures of fine fruit; a huge cluster of grapes—covering an entire page—makes his mouth water. It is pronounced a new thing, the best out, sure to grow, bears immense crops every time; price only \$2; dog cheap. After a little hesitation the order is given. This process continues until he has subscribed for a half dozen peach trees, a pear tree, a few early apples, several cherries, a quince bush, two curculio proof plum trees that are warranted to bear tremendous crops every year, a dozen Lawton blackberries, a Siberian crab-apple tree, which was put in at two-thirds regular price to make even change. To guard against any remonstrances from the female portion of the household before the fatal signature is made, a rose-bush with a long name is gratuitously thrown in. The transaction finished, nothing more is thought about it until a notice is received by mail that the goods will be on a certain day at a certain station and at this time and place his presence is demanded with a given amount of cash, and that there will be no

delays on account of the weather. At the appointed time he breaks up his team, perhaps on a nice day in April or May, when he is in a great hurry to get his ploughing along, just to go alter a small bill of trees. With maledictions in his heart, vowing that the next tree pedlar that comes upon his premises shall meet his reward in this world, he arrives at the station, where he finds a small bustling crowd and an atmosphere charged with horticultural electricity. He exchanges greeting with a neighbor who is in the same predicament as himself, meets the urbane tree agent who grasps him by the hand, enquires after his family's health, prognosticates a bountiful harvest, receives his pay, hands over the goods; with a parting benediction, sends him home rejoicing. What are the results?"

THE JAPAN VARNISH TREE.—Some years ago Northern nurserymen used this name for the *Kolreuteria paniculata*, but the late W. R. Prince protested so strongly against it, that the name was dropped. He thought, and properly, that this name was appropriated by *Rhus vernix*. But in the South, at this time, Japan Varnish tree means the Sycamore *Sterculia*—*Sterculia platanifolia*—which is one of the most popular large growing shade trees in that section.

THE BO-TREE AT ANURADHAPURA.—If the stories about the original Bo-tree at Buddha Gaya can be believed, it is said to have been planted by Brahma himself. The Buddhists attribute it to Dutugemunu, King of Ceylon. One account of the transfer of the branch to Ceylon is as follows: "At the time on which Dewenipiyatissa reigned in Colombo (B. C. 306) one of the four branches of the original tree in Dambadiwa is said to have been surrounded by a yellow line, when it was commanded by a son of the King, who had become a *rahat*, to depart to this island. Then, in an instant, as if cut by instrument, it came through the sky and was planted at Anuradhapura. Many of the Sinhalese go on pilgrimage to the place and think that the very tree produced from the miraculous branch is still alive, and that the other Bo-trees in the island are derived from this source." Here is another account: "Shortly after the building of the Thuparama dagoba had commenced, some of the King's female relations expressed a wish to become nuns. Mahinda accordingly sent for his sister, Sanghamitta, who had entered the order at the same time with himself. Taking leave of her father, she brought over with her a band of nuns and instructed the new disciples in the precepts of Buddhism, their principal occupation being the hearing and repeating of the sacred books. Sanghamitta also brought over with her a branch

of the sacred Bo-tree, the tree then growing at Buddha Gaya on the site of the present temple, and then believed, not perhaps without reason, to be the very tree under which Gautama had experienced that mental conflict which is called his attainment of Buddhahood.

"That precious memorial of their revered teacher was planted at Anuradhapura, a little to the south of the Ruwanwella dagoba, and, strange as it may seem, there it still grows. The tree could scarcely have lived so long had it not been for the constant care of the monks. As it showed signs of decay, terraces were built up around it, so that it now grows more than 20 feet into the surrounding soil; for the tree being of the Fig genus (*Ficus religiosa*) its living branches could then throw out fresh roots. Where its long arms spread beyond the enclosure, rude pillars of iron or masonry have been used to prop them up, and it is carefully watered in seasons of drouth. The whole aspect of the tree and its enclosure bears evident signs of extreme age; but we could not be sure of its identity were it not for the complete chain of documentary evidence which has been so well brought together by Sir Emerson Tennent." According to Tennent, "The Bo-tree of Anuradhapura is, in all probability, the oldest historical tree in the world. It was planted before Christ, and indeed is now (or rather was when Tennent wrote his book) 2147 years old. Ages, varying from one to four thousand years have been assigned to the Baobabs of Senegal, the Eucalyptus of Tasmania, the Dagon-tree of Oratawa, the Wellingtonia of California, and the Chestnut of Mount Etna. But all these estimates, however ingenious, must be inferential, whereas this age of the Bo-tree is a matter of record. Its conservancy has been an object of solicitude to successive dynasties, and the story of its vicissitudes has been preserved in a series of continuous chronicles amongst the most authentic that have been handed down by mankind. Compared with it, the Oak of Ellerslie is but a sapling, and the Conqueror's Oak in Windsor Forest barely numbers half its years. The Yew trees of Fountains Abbey are believed to have flourished there 1200 years ago; the Olives in the garden of Gethsemane were full grown when the Saracens were expelled from Jerusalem, and the Cypress of Sorna in Lombardy is said to have been a tree in the time of Julius Cæsar: yet the Bo-tree is older than the oldest of these by a century, and would seem to verify the prophecy pronounced that it will flourish and be green for ever."—*Ceylon Paper*.

HORRIBLE NAMES FOR INNOCENT FLOWERS.—At a meeting of the Massachusetts Horticultural Society, Mr. Manning, the secretary said, that the agitation of this subject was begun nearly forty years ago, when "rules of pomology" were adopted by this society. In 1867 similar rules were adopted by the American Pomological Society. The improvement proposed by Mr. Wilder was adopted by Professor Decaisne of the Jardin des Plantes at Paris in his magnificent work, the "Jardin Fruitier du Muséum," commenced in 1858; but to Mr. Wilder belongs the credit of first making it practical in American pomology. The same principle has been applied to the nomenclature of vegetables in the publications of the society. Clark's No. 1, Beauty of Hebron and Early Rose potatoes becoming Clark, Hebron and Rose; and the speaker suggested that it be applied also to the names of garden flowers and ornamental plants, thus avoiding such names as *Ilex Aquifolium parvifolia conspicua argenteo-marginata*, or, not to take so extreme an instance, Waterer's Holly is infinitely preferable to *Ilex Aquifolium var. Watereri*. On this point he commended to the attention of those interested a little tract by Dr. Masters, editor of the *London Gardeners' Chronicle*, on the "Nomenclature of Garden Plants."

HISTORICAL JOTTINGS ON THE MUSHROOM.—Our English word "mushroom" certainly comes from the French, *mousseron*, and that again from an old word of doubtful derivation, yet which is possibly traceable to "mucus" in the Greek and Latin, alluding therefore to the moist or slimy characteristics of plants belonging to the mushroom group. The Latin generic name—viz., *Agaricus*, points us to a region of Sarmatia, where this and other species akin thereto grew plentifully, probably do so at the present time. The English seekers for mushrooms are aware that they may be found in many fields and open parks, especially in those where horses are turned out to graze; and the habit of the wild plant would justify its specific name of *campestris*, though it also grows plentifully in some places that are more secluded. The "champignon" of the French and the "pratiale" of the Italians suggest the same idea, and the earliest historic associations of the mushroom attach to Italy; yet it does not appear to have been cultivated by the Roman gardeners, but a dish of mushrooms was made the vehicle of a deadly poison by the vile Agrippina when she wished to remove her husband Tiberius Claudius. A remark made by Pliny shows in what estimation mush-

rooms were held amongst the gourmards of Imperial Rome. They regarded them as appetizers, besides liking them for their own qualities of flavor. "A dish of mushrooms," says he, "is the last device of our epicures to sharpen their appetites and tempt them to eat inordinately." And again he says, "there are some dainty fellows of such fine taste, and who study the appetite to such excess, that they dress mushrooms with their own hands, that they may feed on the odor while they are preparing the food." It is a singular circumstance, that although the Italians of our time eat several species allied to the mushroom we cultivate, that is not grown by them, and is mostly avoided when they are gathering edible fungi.

The common mushroom is not, however, a plant which can be referred to any particular locality. It is found wild throughout Europe, even in the cold Lapland, also in Asia as far as Japan, in both Africa and America. This is easily explainable by the extreme minuteness of the spores and the fact that the air is ever full of them; hence the breezes waft them in all directions, and they settle upon the earth or attach themselves to plants and to animals. Frequently they are swallowed by the latter, but these spores pass through the digestive apparatus of some if not of all animals unimpaired as to their power of germination. Low as the fungi are in the scale of life, they preserve their distinctness, and the mushroom never degenerates, although there are some varieties; so it is always separable from several poisonous species which yet resemble it nearly. Thus it is easily distinguished from a toadstool with dark gills, that is otherwise very similar, by the circumstance that the gills change from pinky red to a dull brown; about the same time the cup, from being convex, becomes flattened, while it also turns brown and scaly.—*London Journal of Horticulture*.

MISTAKEN ADDRESSES.—It is perfectly amusing how our European friends get mixed up on American questions. In the official report of the International Exposition at Antwerp, that has just come to our table, the late Mr. Downing is spoken of as "Charles Downing, of Rochester, New York," and Col. Wilder is made "President of the Horticultural Society of central New York."

LECTURES ON BOTANY IN THE WEST.—One of the most promising of the new generation of botanists, Ernest Walker, recently delivered a series of lectures before the class in botany, at DePauw University, on the subject of "Plant Propagation," which were both interesting and in-

structive. His talks embraced "The Nature of Buds," "The Nature of Seeds," "Influences Affecting the Development of the Seed and its Progeny," and a systematic discussion of the "Methods and Means of Plant Propagation."

JAMES Y. MURKLAND.—James Y. Murkland died suddenly at his residence at Hackensack, N. J., on the 16th inst. He had been ailing for the past five or six years with disease of the lungs, and there was no hope that he would ever recover. Mr. Murkland was a native of Ayreshire, Scotland, and about forty years of age. For nearly twenty years he had been with the firm of Young & Elliott, seedsmen of New York, and was a member of the firm at the time of his death. An enthusiast in everything pertaining to horticulture, and of more than ordinary natural abilities, few had a more general knowledge of the subject, and the public is indebted to the enterprise and discrimination used by him in disseminating many of the most popular plants now grown. Mr. Murkland was the Secretary of the New York Horticultural Society, of which he has been the head and front for the past eight years, and what success it has had in the past has been largely due to his energy and well judged efforts.

Few men had more warm friends than James Murkland. Well educated, and generous to a fault, he possessed a genial sunny nature and an infinite fund of humor, that even in his years of failing health made him ever look on the bright side of life. A truthful, manly fellow, of whose friendship any man might well be proud. Among all the trade around New York and Philadelphia, no one was better known or more honored and respected than he.

P. H.

JOHN NISBET.—Among the earlier of the most valuable contributors and friends of the *GARDENERS' MONTHLY* Mr. Nisbet held a prominent place. He was one of the most intelligent of the highly educated race of gardeners, of which the generation passing away may well be proud. He was born at St. Mary's Isle, Kirkcudbright, Scotland, July 16th, 1816, and died at Providence, R. I., on the 7th of June; so that he had reached nearly his 70th year. He married in March, 1842, and left Scotland a few days after. His first place was in charge of the grounds of Captain Comstock, at East Providence. In 1845, he laid out the beautiful grounds of Mrs. Anna Jenkins. In 1857, we find him at Henry S. Mansfield's, at Millville, Mass. Ever since 1862 he has remained in charge of Mrs. Moses B. Ives' place, and her successor,

Henry G. Russell, at Providence. He leaves a widow with three sons and three daughters.

Like most of the intelligent horticulturists, both of the past and present day, Mr. Nisbet was among the unselfishly public spirited men to whom society owes so much. His sympathies ran in the direction of succoring the unfortunate. For fourteen years most of his spare time was given freely as a moral instructor in the state prison. The philanthropic circles of his adopted town will miss him very much, while practical horticulture in America loses one of its brightest ornaments.

ENTOMOLOGICAL SOCIETY OF ONTARIO: SIXTEENTH ANNUAL REPORT. Mr. Wm. Saunders, President, London, Ontario.—There is always novelty in plant studies; but the insect world fully equals the plant kingdom in having something new for its students. This particular society is very energetic in keeping up with the times, and we cannot imagine anything more acceptable to the northern entomologist than the report here offered. It has a full list of the butterflies of Quebec.

CONTRIBUTION TO THE HISTORY OF CERTAIN SPECIES OF CONIFERS.—By Dr. Maxwell T. Masters. London: reprinted from the *Linnæan Society's Journal*.

The links that have marked the evolution of the different forms of coniferæ have, in many cases, not dropped out, and hence it becomes very difficult to decide one species from another. It will probably be a long time before there is nothing left to write about in this lovely class of trees. In this treatise Dr. Masters writes of *Abies amabilis*, the rare Fraser River Silver Fir; *Abies grandis*, chiefly from the Columbia River and western slopes of the Rocky Mountains—to this is referred *Lowiana*, *Parsonicana*, and some others, which, however, make distinct forms in garden culture; *A. concolor*, chiefly from the more southern ranges of the Rocky Mountains; *A. sub-alpina*, chiefly from the mountains from Alaska southwardly—*A. bifolia* is referred to this; *A. nobilis*, mountains from Oregon southwardly—varieties are made of *glauca*, *magnifica* and *robusta*; *A. religiosa*, of the mountains of Mexico; *A. Fortunei*, of China, which has been confused with *A. Jesensis*—this, by the way, is one of the cross-grained species that upsets botanical classification. One time *Picea* (now *Abies*) was distinguished from *Abies* (now *Picea*) by having the cones sitting upright on the branches, and the cones falling to pieces when the seeds were ripe. These were

the firs—the permanent drooping cones formed the spruces. This one has upright cones, and leaves like a fir, but the cones are as permanent as those of a Norway spruce, which, except shorter and broader, they much resemble. Of the spruce family (now *Picea*) he refers to *P. omorika*, a Serbian species, allied to *P. orientalis*; *P. Penke*, allied to *P. excelsa*. The others referred to are *Arthrotaxis laxiflora*, *Cephalotaxus pedunculata* and *Pseudo Larix Kæmpferi*. Excellent plates of each accompany the text.

CATALOGUE OF BOOKS AND PAPERS RELATING TO THE FERTILIZATION OF FLOWERS.—Compiled by D'Arcy W. Thompson, of the University of Cambridge. Published by McMillan & Co., London. The interest manifested in the subject of the cross-fertilization of flowers may be illustrated by the fact, that we have here the titles of 814 papers given. Among the larger contributors to this extensive literature we find W. W. Bailey credited with 8 papers; W. J. Beal 7; A. W. Bennett 26; Charles Darwin 19; F. Delpino 29; A. Engler 7; Asa Gray 22; W. E. Heart 8; George Henslow 12; F. Hildebrand 32; W. H. Leggett 8; F. Ludwig 21; T. Meehan 60; C. E. Morren 9; Fritz Muller 18; Herman Muller 61; W. Trelease 14. Six of these larger contributors are American observers.

THE LAW OF FIELD SPORTS.—By George Putnam Smith, of the New York Bar. New York: Orange Judd & Co. One, though a sportsman, would hardly believe his amusement to be subject to so much law as is given in relation thereto in this book. It is enough to make a new beginner afraid of a gun, to glance over the pages. The veteran, however, will be glad to know first where he is right, and the young beginner will have the chance to feel sure he is right before he goes ahead.

THE BRIDLE BITS.—A treatise on horsemanship. By Colonel Battersby. New York: Orange Judd Company. 1886.

Col. Battersby is famous as a rider. As a member of Sheridan's corps in the army of Virginia, his feats of horsemanship are matters of record. The 1st New York Cavalry got an expert reputation under his control. He is just the one to tell about riding. The book is very pleasantly written, and will interest those who care at all for horses, as well as those who love to ride. Intelligent as the horse is, who would suppose that a wild horse would care to take pains to obtain freedom for the domesticated horse! A pleasant incident narrated here, is the manner in which a band of wild

horses took pains to free emigrants' horses traversing the plains. It was evidently not so interesting to the owners of the animals. Human beings could not show more good reason and subtle judgment than these horses exhibited in their philanthropic enterprises.

ROSEN-ZEITUNG.—France has a magazine, the *Journal des Roses*, devoted wholly to information about the queen of flowers. Now Germany follows with a Rose magazine under the above title. It is edited by C. P. Strassheim, and published at Sachsenhausen, near Frankfort. The first number was issued on the first of January.

SCRAPS AND QUERIES.

RUSSIAN OLIVE.—Carpenter & Gage, Fairbury, Neb., write: "We notice a short article in the GARDENERS' MONTHLY on the Russian olive. The so called Russian olive may not be a native of Russia. The tree was introduced into this State by the Russian Mennonites. While the tree is very hardy, we believe it to be nothing more nor less than the wild olive of Europe. The tree grows to the height of 30 feet, its branches are covered with sharp thorns, the leaves are a dark rich silver color and are evergreen in the South. The flowers are small, color dark golden, and very fragrant. The fruit is small and worthless. The tree is not only valuable as a hedge plant, but is an ornament to the lawn. There are miles of olive hedges in southern Kansas that are a perfect barrier for stock. 'B. F.' can see one of the trees on the post-office grounds at Lincoln."

[If our correspondents will send us a small piece in a letter, we will, with pleasure, give them its correct name. Mr. Teas, of Indiana, sends us a piece which he says is the Russian olive, as sold "in the West," and it is nothing but the common Siberian pea of Eastern nurseries, *Caragana arborescens*, and has nothing about it by which it might honestly be termed an olive.—Ed. G. M.]

RHODODENDRON AND AZALEA. — "Querist" wants to know: "Why is it that some nurserymen send out azaleas and label them rhododendrons, as occurred with me in an order this spring? I wanted rhododendrons, and I received azaleas. Is this honest?" He does not say what kind he ordered. Botanists have dropped the name azalea because they cannot tell the difference—but if nurserymen follow the botanists they will get into trouble. They had better stick to azalea. The California rhododendron is an azalea.

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

THE SOCIETY OF AMERICAN FLORISTS.—The approaching meeting promises to be a grand occasion. The brethren of Philadelphia are sparing no expense to make it memorable. The committees feel almost sure of an attendance of 700, with a possible 1000. The motto of the city "Philadelphia maneto," will not be disgraced, for no effort is being left untried to make the brethren feel at home when they come here.

And outside of the physical comforts that they may expect, the intellectual will not be overlooked. The programme includes the opening address of President Thorpe, and Mr. Peter Henderson will tell of the progress of floristry during the past forty years. Mr. Antonie Wintzel, who probably knows more about rose varieties than any one in America, will treat of Tea roses during summer; Mr. John Henderson, on summer Hybrid Perpetuals; and Mr. Robert Craig, how to prepare pot roses for market. Mr. Sackersdorff will explain the fungous diseases of roses, and Mr. May, the best way to build greenhouses.

Those who advocate hot-water for heating will be heard through Mr. Carmody, while Mr. Taylor will contend that steam has greater advantages; those who do not care for either can get comfort from Mr. Hamilton's advocacy of flues. The treatment of carnations will be diagnosed by Mr. Tailby; while our old friend, Taplin, who used to tell the readers of the *GARDENERS' MONTHLY* so much about orchids, will now discourse on decorative foliage plants. This bill of fare ought to be enough to attract a large and appreciative gathering, but it will not be near all. Mr. Le Mout will explain the whole art and mystery of making up floral work, and will suit the action to the word. He will make up his pieces of work as well as speak his piece, and many think that this instructive essay will alone be worth coming to Philadelphia to see.

THE AMERICAN NURSERYMEN'S ASSOCIATION.—In the debate on the place of next meeting the urgent demand of Texas was overruled, on the ground that in summer it is "too hot." When a member leaves home and gets caught in a warm wave, he generally blames the "hot place," forgetting that if he had been at home it would have been just as hot there. The writer of this has

been over every part of the United States in summer, from the mouth of the Saint Lawrence to the Gulf of Mexico, and from the Arctic Circle to the Lower California, and has found no place but seemed the "hottest place on earth;" unless he was on a mountain top, or some special "watering place" along the coast, where cool "sea breezes" sometimes successfully compete with the hot wave from the land. In Southern places the heat is longer continued than other places, that is all. For a few days one might as well be in the South as in the North. The writer has found a more sweltering and oppressive heat in Canada in August, than in Texas in the same month. The Association will miss much profit if it does not visit Texas some time.

THE ROYAL HORTICULTURAL SOCIETY OF ENGLAND.—Among the full foreign members in the list just published are the names of Professor Sargent, of Brookline, and Mr. Sereno Watson, of Cambridge, Mass. Among the Honorary foreign correspondents, are the following also from the United States: P. Barry, the late H. B. Ellwanger, C. M. Hovey, Burnett Landreth, Robert Manning, Thomas Meehan, Prof. Thurber, and Col. Wilder.

MASSACHUSETTS HORTICULTURAL SOCIETY.—Horticulture receives patronage from the best people in the vicinity of Boston, and hence its exhibitions are always among the best in the world. We say, among the best in the world, for a friend who has seen these exhibitions recently, and also the great international one at Antwerp last year, assures us that outside of Palms and some huge foliage plants, the Massachusetts exhibitions would carry off the palm. Our readers may judge of the number of exhibitors in the class of strawberries alone, when it is noted that there were no less than fifty-two premiums awarded. When a new variety is introduced, and gets its reward among such a host, it is something to be proud of. On this occasion one called "Gold," exhibited by E. A. Wood, received the Society's Silver Medal. Many old kinds still retain a foothold in these exhibitions. The Jucunda was in several collections, but we missed our old friend Hovey's seedling. Mr. Hovey himself had, however, the first premium for the best forty-eight specimens of Charles Downing, and Col. Wilder walked off with a number of premiums for various kinds. The So-

ciety offers premiums not merely for the "best strawberries," but for the best in each popular variety. This makes the competition more intelligent and instructive. Cherries, on the other hand, do not seem to excite Bostonians. Only two premiums were awarded; one to Isaac Langworthy for Knight's Early Black, and one to S. Lockwood, Jr., for Black Tartarian. Forced peaches were honored in a premium to W. C. Winter, for Early Crawford, and to the same for a fine plate of the Foster.

As in strawberries, so in roses. Premiums are offered for the best blooms of special varieties. Thus premiums were awarded six blooms of Alfred Colomb, David Allan; second, J. B. Moore & Son. Six blooms of Baroness Rothschild, David Allan; second, Mrs. Francis B. Hayes. Six blooms of John Hopper, Mrs. F. B. Hayes; second, J. B. Moore & Son. Six blooms of Marquise de Castellane, the second prize to J. B. Moore & Son. Six blooms of Merveille de Lyon, William H. Spooner. Six blooms of Mme. G. Luizet, Mrs. F. B. Hayes; second, David Allan. For the best twelve blooms of any other variety, J. B. Moore & Son, for Thomas Mills; second, David Allan, for Princess Beatrice. Special prize offered by a member of the society for the best twelve blooms of Merveille de Lyon, Warren Heustis. Besides premiums for roses in every conceivable form and shape.

But the great test of the interest taken by the cultivated classes in horticulture is always to be found in the plants exhibited; for it is well understood that one of the surest indications of culture in a community is to be found in flower growing. The following from the *Transcript*, tells the story:

"F. L. Ames fills a table at the rear of the hall; among his plants are the rare *Lælia Schroederi* and *Masdevallia Schlemmii*, also new. The plant of *Lælia purpurata* in this collection, which took the first prize for a single specimen, is a very fine one. David Allan, gardener to R. M. Pratt, fills a table with a large collection of orchids, among which are several fine plants of *Cattleya*, a *Mossia*, *C. Gaskilleana*, *Dendrobium chrysotomum*, *Odonoglossum citrosum*, etc. Between these two tables is one filled with orchids from Thomas Graves, gardener to E. W. Gilmore, and Moss and other roses. John L. Gardner fills a stand near the centre of the hall with a fine collection of flowering plants, including several beautiful heaths, one of which, *Erica Bothwilliana*, takes the first prize for a specimen flowering plant—a large and fine *Rhynchospermum jasminoides*, *pelargoniums*, etc. From the Botanic Garden come *Dracoccephalum Ruyschianum japonicum*, with deep blue flowers, and hardy; a plant of *Leontopodium alpinum* (Edelweiss); *Jasione perennis* (Campanu-

laceæ), *Cattleya Mossia*, with thirty-three flowers, and *Leucodendron argenteum* (Silver Tree, from Africa). Hon. Marshall P. Wilder has the new *Deutzia*, *Pride of Rochester*; *Schizophragma hydrangeoides*, and the new rose named for him by the originator, the late Henry B. Ellwanger. John C. Hovey has a collection of Richardson's new seedling *pæonies* and Edwin Fewkes a collection of beautiful hybrid *Delphiniums*. J. W. Manning has a large collection of hardy herbaceous plants, including *Lilium pomponianum* and *Cypripedium spectabile*. Mrs. L. P. Weston has also a good collection, which, by presence of one shrubby plant, was, unfortunately, disqualified from competing for the prize. Robert Manning contributed a fine specimen of *Actinida polygama*, a Japanese hardy climber, which attracts much attention. Mrs. P. D. Richards brought an interesting collection of native plants, including *Habenaria virescens* and *Rosa humilis*, a common wild rose, lately determined to be a distinct species. E. H. Hitchings also has a collection of wild plants, including *Rubus strigosus* (the common wild raspberry), with beautifully variegated leaves; *Ilex lævigata*, *Habenaria fimbriata*, and a beautiful specimen of *Kalmia latifolia* (mountain laurel). Mr. Hitchings and Miss Mary L. Vinal have *Epigaea repens* (trailing arbutus) in seed, in which condition it is rarely seen.


MISSOURI STATE HORTICULTURAL SOCIETY.—Mr. L. A. Goodman, Secretary, sends a report of fruit crop, June 25th, 1886, as follows:

"I sent out requests for reports on the condition of the fruit crop on or about June 1st. Many reports were not received until late and are just compiled. The prospect was never better for the State as a whole, and if everything keeps favorable we will likely have the largest apple crop ever known in Missouri.

"The winter injury to trees has not been as bad as expected, except to peach trees. Our berries have come out much better than we thought they would, and in most places paid well. The wonderful growth of all our trees will in most cases overcome the injury by the winter. The twig blight has injured the apple trees in many parts badly, and, it is feared, the next crop, also, in some cases. The pear trees are blighting and we fear the trees are doomed in many places. The peach trees are badly killed all over the northern part of the State, but in the southern part the trees are in splendid condition. The raspberries and blackberries which were injured are making a fine growth and will be in good shape for next year."

AMERICAN INSTITUTE OF THE CITY OF NEW YORK.—The Horticultural Department has issued a schedule of articles to be competed for, which may be had of John W. Chambers, Exhibition Building, 3d Ave., between 63d and 64th. The exhibition is to be from the 6th to the 9th of October. An amateur is defined to be the owner of any articles who does not make his living by growing them for sale.

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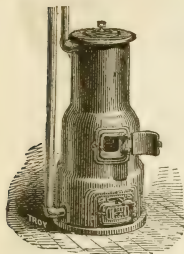
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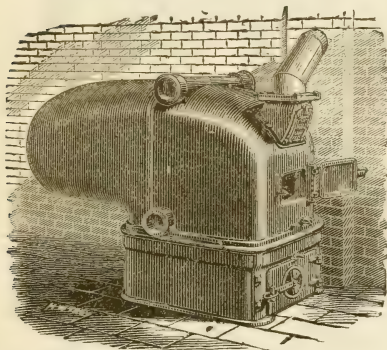


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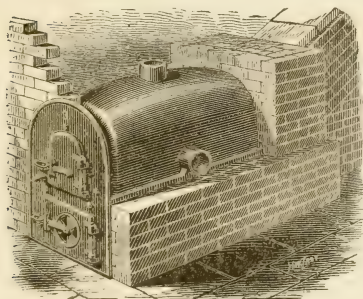
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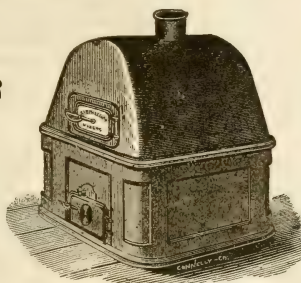
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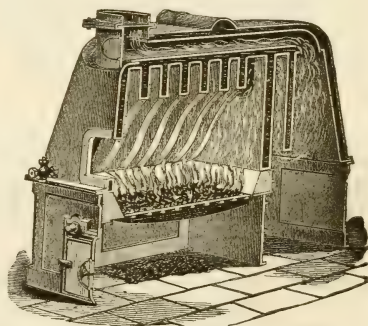
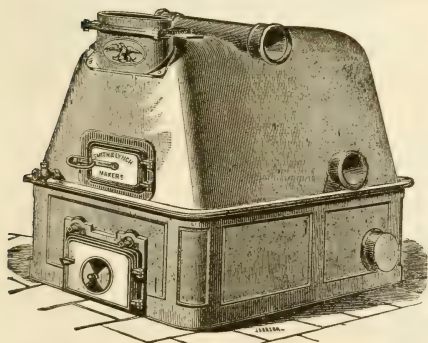


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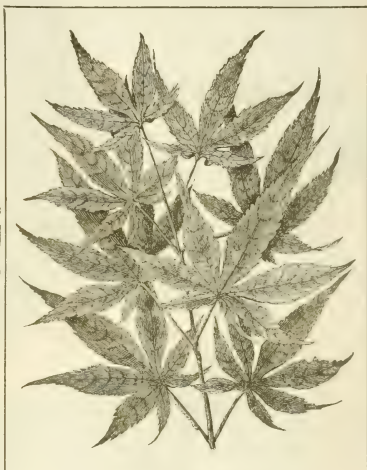
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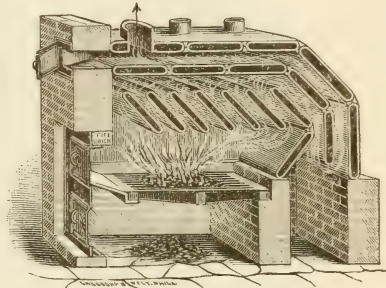
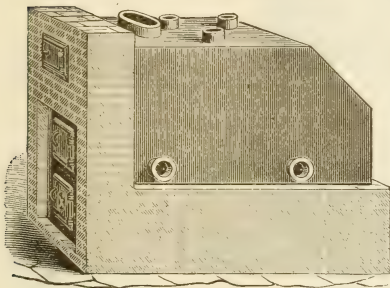
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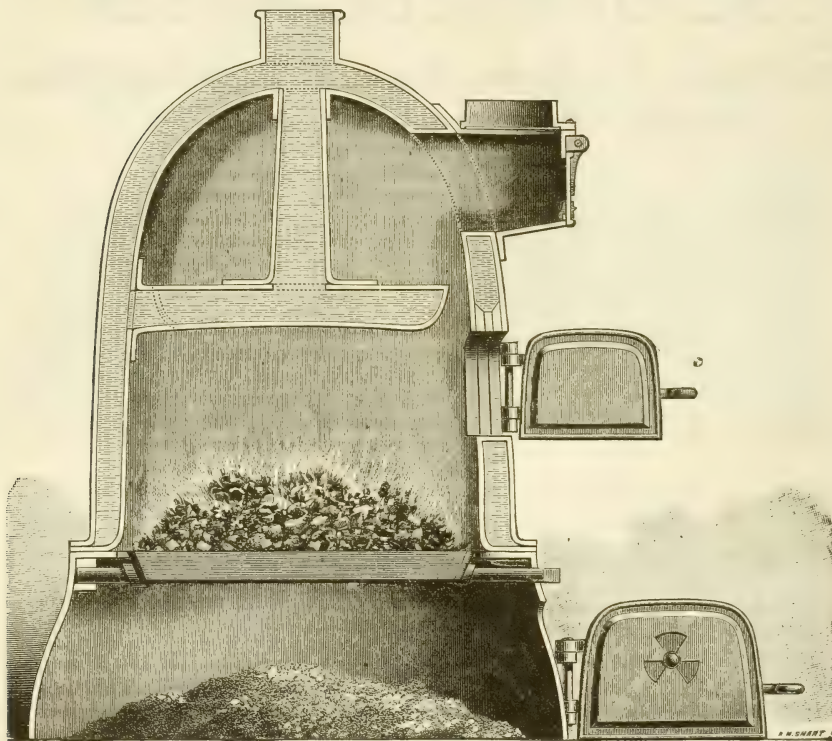
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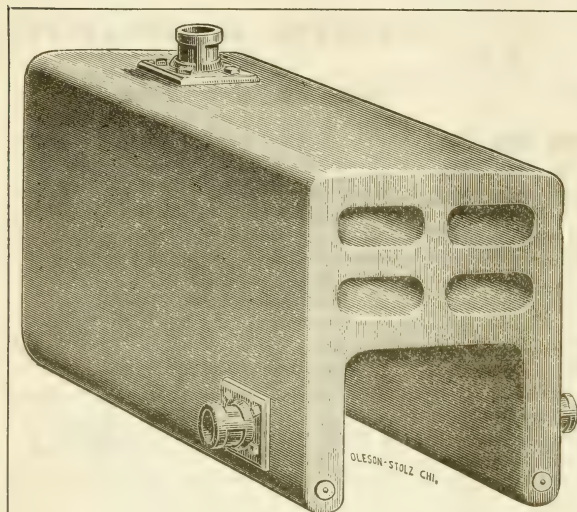
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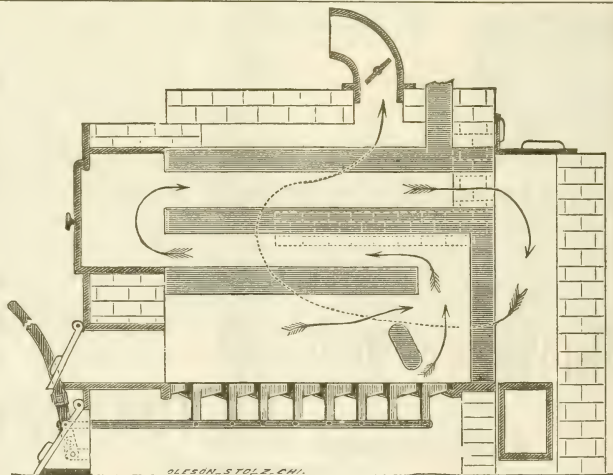
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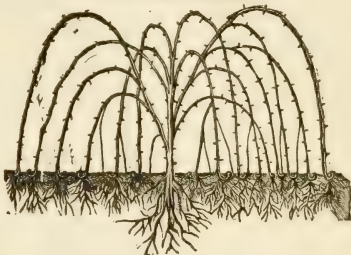
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Edited by THOMAS MEEHAN.

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SEPTEMBER, 1886.

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FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

Whoever has travelled in the South at midsummer must have been struck with the great beauty of the old neglected fence-rows, covered with Trumpet Creeper, and all ablaze with their fiery red blossoms,—varied only by a few leaves here and there and the moving shadows of the flowers, as they trembled under the flutter of the honey-sucking humming-bird, which in innumerable hosts made their meals among the blossoms. We get some idea of this scene of beauty from the cultivated plant in northern gardens, where it is often allowed to run over walls, trees, and other places, making a fair show. It is, indeed, one of the most esteemed of hardy vines in the northern part of United States; as, aside from the beauty of its flowers, it is one of the few plants that will adhere to walls without nailing or trellising of any kind. But few know how beautiful the plant is when trained as a weeper, or, if desirable, over a wire, to form an arbor. In this case there is nothing that we know of that can compete with it in beauty. To do this it is only necessary to plant a stake that will last several years alongside the plant when set out. When the plant gets towards the top, head it off, and cut away the side shoots. By the time the post is rotten, the stem of the vine is self-supporting. We annex (p. 258) an illustration

copied from the *Gärtner Zeitung*—the plant being more popular for this purpose in Germany than here, in its native land. In Japan there are some closely allied forms, having larger flowers, but less brilliant than those of our country. Wistarias and other strong growing vines can be made into “trees” or weepers in the same way.

With the month of September we begin to lay out plans for the improvement of our grounds. Herbaceous plants, like varieties of fruits, usually delight in being renewed from seed occasionally. Save at this season those that may be particularly desirable and sow early next spring. If sown now some may bloom next year.

We may make up our minds now what trees to thin out when the winter comes. In almost every place trees are too thick, except where clumps of trees are desired for landscape effect. Along streets twenty feet is the space usually given. This is well enough for the first ten years, but after that forty is enough. A tree which spreads its branches is always more graceful than a mass of branches drawn up. And a tree which spreads affords no temptation to have its head cut off. Such trees are bad subjects for the tree butchers that infest the environs of all large towns.

In transplanting this fall do it as early as possible, that the earth may settle well about the roots before winter sets in. All successful planting re-

ally depends on how soon the mutilated roots can draw in moisture to supply the waste of evaporation; hence if a tree has been badly dug and has few roots or the roots appear dry or weak, lessen the demand on them for moisture by cutting away some of the branches. In this cutting take the weak branches, and not the strong and most vital ones, as are often stupidly sacrificed, and above all see that the earth is tightly packed about the roots; for, unless the earth is in actual contact with each rootlet the work is not perfectly done. If there is a rootlet which even by a hair's breadth does not touch the earth, that rootlet might as well not be there. It is a very good plan to lift the tree up and down a little before the earth is hammered in about the roots, so as to allow the earth to close in around the roots as much as possible.

Hardy bulbs should be transplanted when necessary in the fall, and the earlier in the fall the better. They will do pretty well up to frost. All this applies to Dutch bulbs as well as others. Bulbs like to be rather deep, and to have the soil rather rich and rather damp. It is the low reclaimed mud of Holland which helps their bulbs quite as much as the skill of the Dutch gardeners.

We have said a good deal about ornamental hedges in past numbers; but not, perhaps, as much as the subject deserves. Not only do they make the very best kind of boundary fences, and form in themselves beautiful objects, but they have a great use in small places in breaking off long and uninteresting scenery, and, by dividing perhaps one grand view into innumerable parts, make a small place seem very large indeed.

Of evergreen hedges the most readily obtained are Norway Spruce and Scotch Pine, Hemlock,

Spruce, and Chinese and American Arbor Vitæ,—but where dwarf dividing lines are desirable the golden *Retinospora* and dwarf forms of *Arbor Vitæ* make pretty objects. Of deciduous hedge-plants almost any of the thick growing shrubby make pretty hedges.

It is not necessary to wait till all the leaves are off before planting. Cut away whatever may not be mature; no matter if those of no experience regard it as barbarous to do so. No one regrets it who once tries the plan. Gardeners take the leaves off of cuttings they make, and a transplanted tree is in much the position that a cutting is.



Trumpet Creeper as a Weeping Tree.

COMMUNICATIONS.

COLOR AND FORM IN TREES.

BY SAMUEL B. PARSONS.

Some time ago a paper was read before the Massachusetts Horticultural Society, in which variations in form and color of trees were treated with contempt. It did not seem worth while to answer it at that time, because it was evidently the result of an idiosyncrasy which would not be repeated. Now that an article has also appeared in the *New York Tribune* of July 19th, enunciating the same opinions, it may serve the cause of true taste to criticise them both.

Let us first consider the earlier paper, which says: "We have a long list of Golden Oaks, Golden Ashes, Golden Lindens, striped-leaved, silver-leaved or golden-banded varieties, hideous

to any lover of nature. Looking upon these sickly plants, each seems in turn more ugly than its neighbor. All should be sent to the rubbish heap together."

Does the writer think that these plants which he anathematizes, are not works of nature? By what process did man produce them? Does nature always furnish plants of the unvarying green? Does the writer realize the effect of a picturesque lawn, and cannot this be made by permanent colored leaves as well as by short-lived colored flowers? Knight makes them both necessary.

"The bright Acacia and the vivid Plain.
The rich Laburnum with its golden chain,
And all the variegated flowering race,
That deck the garden and the shrubby grace."

And again thus describes the colorless places which our writer esteems the resulting efforts of the highest combinations of nature and art.

"But wrapped o'er all in everlasting green,
Makes one dull, rapid, smooth, unvaried scene."

At Forest Hill Cemetery, near Boston, there was, when I was last there, a Golden Oak of size, with a tint not of faded yellow nor of yellow bronze, but of a rich glossy, lustrous gold. In May and June its beauty is at the best; in August it fades somewhat, and then through September and October its color comes back to the sunlight tint of June.

The soft rich lavender tint of the *Abies pungens* has a charm for all who see it. An experience of forty years has not made me insensible to the beauty of foliage, and I never tire of looking at them both. Yet these trees are among those which our writer thinks "should be sent to the rubbish heap." He would send the Golden Ash to the same spot, and yet a recent writer in *Woods and Forests* describes the beauty of the foliage of this tree as "that of a cloud of clear lemon." So the Golden Elm is striking for its rich golden bronze, and the White Elm for its strong and constant white variegation.

Let us see what else we should have to send to the "rubbish heap," under the rule above mentioned:

Golden *Retinospora*—a valuable acquisition from Japan, and so admired that it is used for hedges and also for window decoration.

Golden Yew—a brilliant evergreen, which makes the charm of the grounds at Elvaston Castle, and is universally admired.

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Purple Hazel—much admired and largely used in the Bois de Boulogne, for planting in masses.

Prunus Pissardi—with its bright crimson leaves.

Variegated *Althea*—very striking white and green foliage.

Golden Elder, *Syringa*, *Spiræa*—all very striking shrubs when alone, and very charming in masses.

Variegated *Viburnum*—strong and unique, from Japan.

Lonicera reticulata aurea, well-known as one of the most valuable Japanese acquisitions.

Abies alba aurea—a most beautiful and constant green and gold variety.

Abies Alcoquiana—with its green and silver.

Picea Japonica—with its leaves of snowy white on the under side.

Pinus Massoniana aurea—a most exquisite golden variegation from Japan, called the Sunray Pine.

Golden-leaved Box—a most valuable acquisition from Japan.

All the white and gold variegations of *Juniperus* *Biota*, *Thuja* and *Retinospora*, some of which are exceptionally fine.

All these and many others belong to the class of plants of which our writer says, that "the only thing which can be said in their favor is, that they will die naturally in a short time."

These plants are growing well in my private grounds, some of them for forty years, and show no evidence of dying. I should be unwilling to spare them, for they charm my eyes always.

The writer continues thus: "There must always be exceptions, and nature has, in making a change of color, sometimes given us valuable contrasts, as in the case of the Purple Beech; but even the Purple Beech cannot be planted indiscriminately."

Of course there must be judgment in planting, but does not nature scatter with apparent indiscrimination, her masses of gold and purple and scarlet in October forests?

He also writes: "Nor can much be said of that

class of horticultural productions known as weeping trees."

I differ with him in this opinion, for I think much can be said. The broad cathedral form of my Weeping Beech, 50 feet high and 50 feet broad, with a living house for its interior, always excites the admiration of visitors. My Weeping Sophora is a graceful feathery mass of the softest foliage, which always charms, and its moonlight shadows are very beautiful.

The Weeping Hemlock is like an evergreen fountain, and exceptionally graceful. The Weeping Silver Fir and the Weeping Norway Spruce, have each their own merits, and give that variety of form which, with variety of color, make the picturesque lawn which all admire.

I would not be unjust to the writer, for he evidently has a very good opinion of nature when he thus writes:

"Nature is very indulgent, and permits the horticulturist to mould and shape her works into various forms. The perpetuation of these monstrosities and vagaries, is no credit to those who pander to the false taste which encourages such productions."

Now I ought to feel very badly at this denunciation, for I have been doing that thing for forty years. I do not, however, suffer much, because I have an idea that nature, not I, made these forms and colors, and that I honor her by copying and perpetuating her work.

If I should feel very badly, however, I will think of Alfred Parsons and other eminent artists, who, whenever they visit my grounds, sketch gladly the Weeping Larch with its weird and picturesque beauty.

I may fairly conclude this part of my criticism with an anecdote of that eccentric artist, Whistler, in reply to an admirer who said: "I see you everywhere in nature." "Yes," said the artist, "nature is very apt; she shows a decided improvement since I took her up." Our writer does not quite take her up; he only proposes to send her works to the rubbish heap. I prefer to perpetuate them.

The article in the *Tribune* is, perhaps, the more dangerous, because it speaks correctly of many things, except form and color. So it was that the author of the moon hoax, forty years ago, made people believe the things they did not know, by the correctness of his description of the things they did know.

The writer's allusion to the work of Mr. Sargent is very just. It is rarely more than once in a

generation, that a man arises with physical vigor, trained mental ability, abiding enthusiasm and the leisure that wealth gives, all devoted to arboriculture. The possession of these qualities is enabling Mr. Sargent to do a work, the full value of which cannot now be estimated, but will be more and more appreciated as the years roll on.

The writer in the *Tribune* states that foreign trees will not succeed as well in this country as native trees. If all that is not American is foreign, the comparison is scarcely a just one, for all American trees do not succeed well in all America. The trees of the Pacific do not flourish on the Atlantic Coast, and the converse is also true. Prof. Gray tells us, that out of 66 genera and 155 species found in the forests east of the Rocky Mountains, only 31 genera and 78 species are found west of the mountains. There are wanting on the Pacific the Magnolias, Tulip trees, Plane trees, etc., which were found existing in the miocene age in Switzerland, and are now found in the United States.

There is much to sustain the theory that Europe and America were once connected by a continent which was the cradle of the human race. If so, the trees were, doubtless, interchangeably the same, showing only certain distinctions which by long culture become fixed, and, reproducing themselves from seed, were recognized as species. The difference between existing American and European Beeches, Oaks, Lindens, Larches, and many other trees, is not greater than between the European Purple and Weeping Beeches, the English Purple and Golden Oaks, the common and the Silver Linden, the common and the Weeping Larch, and numerous others which the connoisseur in trees will remember. In American Oaks, Willows, Poplars, Hemlocks, Spruces, Pines, etc., there is also greater distinction than between European and American trees of the same families.

There seems to me, therefore, no reason in making a distinction between European and American trees for ornamental planting. The Norway Spruce, Nordmann Fir, Austrian Pine and other European conifers, become unsightly after twenty-five years, and are fit only for destruction. So are the American Hemlocks, except in hedges, and White Spruce and Larch and other trees. So far as American experience in the vicinity of New York yet goes, the Oriental Spruce is the only European conifer which grows more beautiful as it grows older. Among American conifers only the White Pine becomes a stately tree, but its brittle wood makes it liable to destruction by an ordinary ice storm. Those who

wish to enjoy conifers can be safe with them for fifteen or twenty years, which is certainly better than *Coleus* for three months.

It would be much more reasonable to make the distinction lie between the different parts of the United States, where the differences in soil and climate are greater than between Europe and America in the same latitude. Natives of the soil and climate of Massachusetts, may do better there than trees from Kentucky and Illinois, and thus through the whole range of trees and states.

The writer uses the Lombardy Poplar and the Weeping Willow, as illustrations of the worthlessness of European trees. Our own Poplars and Willows are certainly of less value, while none of them can supply the place of the former for certain effects, which all landscape artists recognize.

In matters of taste, every man is fairly entitled to his own opinion; but he is not entitled to stamp as untrue, a world-wide recognition of beauty.

Thus the *Tribune* writer says, in alluding to the admiration for unusual colors and shapes: "To meet the demands springing from such notions, nurserymen have been driven to raise and sell so many trees whose sole merit is that they are purple, or golden, or silvery, or ring-streaked and speckled, or that they can be warranted to grow straight downward and never get an inch higher than the stock on which they are grafted, or to grow straight upward and as sharply conical as a church spire. Fortunately, no eye has been horrified at the spectacle of a wood full of these monstrosities."

Where are our October forests, of which all the world, both artists and artisans, recognize the beauty, when purple and gold, silver and scarlet, wave their banners to show what "monstrosities" they are? Is beauty a thing of season only, or is that which is beautiful in October, charming also in August? A recognition of the beauty of color in flowers belongs to the whole human race. Is color less beautiful when it comes in leaves? Is the brilliant tint of *Jacqueminot* rose to be desired, and the wine-like ruby of the Japan Maple or the *Prunus Pissardi* to be condemned? Has the exquisite color of *Abies pungens* no charm, and is it a huge mistake of nature? Green is not the only color nature has given us, but in this color alone, she has given us all the shades which our author condemns. The light golden tint of the *Liquidambar* stands in our forests by the side of the darker Oak, and on the Alleghanies, the silver Poplars throw up the white of their leaves against a darker back ground.

Thirty years ago I planted an avenue of Tulip trees. In the spring the new growth of these is almost the color of the rising sun which gleams through them, while in the middle of the avenue appears the more sombre foliage of an old White Oak, a remnant of primeval forest, and which was doubtless one hundred years old when Columbus discovered America. On my lawn the light tint of the *Virgilia* mingles with the dark shade of the Purple Beech. All these contrasts give me pleasure; is my taste vitiated and is nature astray? I know that I am right, because I admire the perfect skill and taste of One who has strewn color with lavish hand over our meadows and in our forests. And having thus nature with me I may, without presumption, assert that any landscape artist is unworthy of his vocation who does not recognize the value of color in landscape adornment.

I have not touched the question of form, but our author must be wrong when he stamps as unnatural all conical forms or drooping forms or dwarf forms, and says that, "fortunately no eye has been horrified by the spectacle of a wood full of these monstrosities."

I would like to ride with him from Baltimore to Washington or from New York to Albany, and see the native conical trees which are strewn there in so great profusion. I would like to walk with him through the White Mountains, and see the fantastic shapes which the Birch assumes, first shooting up straight for twenty feet, then the whole top shooting off almost at right angles, or else bending over in the form of a Roman arch. I would like him to see a forest of American Larch; and above all, I would like to have had him with me in a walk I once took through a tropical forest, that he might see the fantastic shapes which many trees took there.

The general denunciation of dwarf forms is also wrong; for there is no reason why the graceful softness of the dwarf White Pine, or the delicate refinement of the dwarf Hemlock, or the dark beauty of the *Spiræa crispifolia*, should be condemned because they never reach one-tenth the size of their brethren of the same family. Creeping Juniper and Red Cedar are growing as brother and sister in the same forest, and in many families there are the little brother and the tall brother, both of mature age.

The position of our writer is sound, "that our own trees, as single specimens, have no superiors in grace, dignity and nobility of expression;" but I would contend that European trees of the same

families are fully their equals, and are not exotics in any other sense than that trees indigenous to Ohio are exotic in Massachusetts. For arboriculture Europe is as much a part of America, in the same latitude, as the west side of Lake Superior is of the east side.

For picturesque effect the American Beech is desirable by the unique arrangement of its branches, but in all else the European Beech is the noblest, even when planted in America. I allude now to large trees which are under my eye. So it is with many other species. American deciduous trees, fifty years old, within my observation, are not less healthy and vigorous than foreign trees of the same species. Our writer then states that American trees lend themselves more readily to the production of "broad effects." What are broad effects? Is it massive planting? and if so, cannot that effect be produced as well by any of the vigorous European trees? He proceeds—"In every attempt at landscape gardening worthy of the name, the individual tree has no value of its own."

I happened to be reading this while riding on the Pennsylvania railroad, and lifting my eyes, saw a mass of forest, with a grand old Elm standing out from it like a leader in front of a host. This tree certainly had an individual value. If individual trees have no value of their own for landscape gardening, why does the true landscape-artist select them so carefully? Their very individuality is their value. By it he produces the effect he desires. Our writer asserts that "native trees, when planted together, compose better than when planted with foreign forms." What is meant

by "compose?" Is it not, like "broad effects," a generality, which sounds well to the uninitiated, but conveys no meaning to the intelligent landscape artist, who composes his scene as the painter composes his picture, by the perfect adaptation of his individual forms, giving them such colors as nature gives, without thinking that he spoils his picture.

My trees have been my friends for fifty years, and under their branches my children and grandchildren have played. They are all vigorous in root and foliage, whether born in Europe or America, and they all charm me, whether golden or purple, whether spreading or conical, whether drooping or creeping. I think their effect is "broad," I think they all "compose" well, and I should be unwilling to consider any of them "monstrosities."

SCRAPS AND QUERIES.

SPIRÆA VAN HOUTTII.—A correspondent at Guelph, Canada, inquires: "If *Spiræa Chamædri-folia* and *S. Van Houttii* are the same? If not what is the difference?"

[We do not know *Spiræa Van Houttii*. Does any reader know the difference?—Ed. G. M.]

THE GAS PLANT.—"D. K.," Flushing, L. I., N. Y., writes: "In the July number you quote the *American Agriculturist* as authority for the statement that the Gas Plant, *Dictamnus fraxinella* will blaze up if a lighted match be placed under it. So it will—even in the day-time when in flower—both the white and the purple. Place the lighted match under one shoot of the plant at a time, but not twice the same day or evening."

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

Eggs and larvæ of small insects get protection in the wood work of greenhouses and conservatories, and the best gardeners give all a thorough cleansing once a year. Where neatness is a feature of a plant house, a coat of paint is desirable. For plant growing for winter flowers, white is the best tint. There cannot be too much light to encourage free blooming. Many have observed that when a house is first built the plants bloom better than in

a few years afterwards. By that time dirt gets between the laps, and often down the rafters, and all tends to lessen the light in the house. Those who grow flowers for profit and use rough lumber, usually whitewash at this season. Sulphur is put in the whitewash, and a little salt. It aids in destroying insect life. In glazing use narrow laps—not only because they collect less dirt, but also less water. In broad laps the water freezes, expands, and cracks the glass. Putty is now seldom used on the outside. It is so apt to separate from the

wood a little, and then the house leaks. But it is necessary to bed in the glass carefully, and tack down with glaziers' brads, before painting the rabets on the outside. For winter flowering a roof with a steep pitch gives more light than a flatter roof,—and it is stronger and gets more seldom out of repair. It is noted by good observers that broken glass is in proportion to the flatness of the pitch. Furnaces should have a careful overhauling, and soot taken out of flues. Much of the smoking at the first starting of a fire comes from choking by soot. If a furnace does not draw well at first, a bunch of shavings on fire at the mouth of the chimney will generally give it a start. There is much about the arrangement of a furnace to task one's notions of good economy. As an actual saving in the coal bill, large coal is cheaper than small,—but small coal will heat up quicker. There is also much waste in small coal, much going through the bars unconsumed. The bars are best set for moderate sized coal, and small coal kept on hand to hurry up in emergencies. Ashes are never wholly taken away from the stoke hole, as when a fire is in good condition, and it is desirable to keep it so, without much consumption of fuel, a few shovels full of wet ashes is just the thing to throw on the top.

There is nothing in gardening on which so much can be saved by good judgment as in the management of a greenhouse fire. At least one-fourth the coal bill may be saved by a sensible fellow in charge, and yet not work as hard over it as a numbskull. Wood is not often used for greenhouse work, except in comparatively mild climates. When used, good chunks covered by damp ashes will smoulder and keep up a little heat for a long time. It is very profitable to use in connection with coal when good solid chunks can be had cheap. Coke is used where one is near gas works, but it has to be had at low figures to be profitable. It requires a larger furnace than coal does, and in severe weather must have almost constant attention, as it soon burns out; but where there is a large amount of glass to be heated, attention must be constant at any rate, and coke may be used to advantage. In heating, hot air absorbs less heat than water, and water than steam,—but the question of rapidity of transmitting heat is of importance. Hence, though it takes more coal to warm a cubic foot of water than of air, or more for steam than hot water, it is often cheaper to use these means of conveying heat, by the less time in which they accomplish their work. Very much may be saved in heating by looking after the waste of heat.

The writer once made an estimate of the large spaces under laps and cracks, through boards and sashes, of one who "could not keep the house warm," and it footed up two square feet.

It will not be long before Chrysanthemums are in flower. The ladies may do well to remember that there is nothing prettier in the world than a bunch of these flowers set off with Mahonia leaves.

COMMUNICATIONS.

PITCHER PLANTS—NEPENTHES.

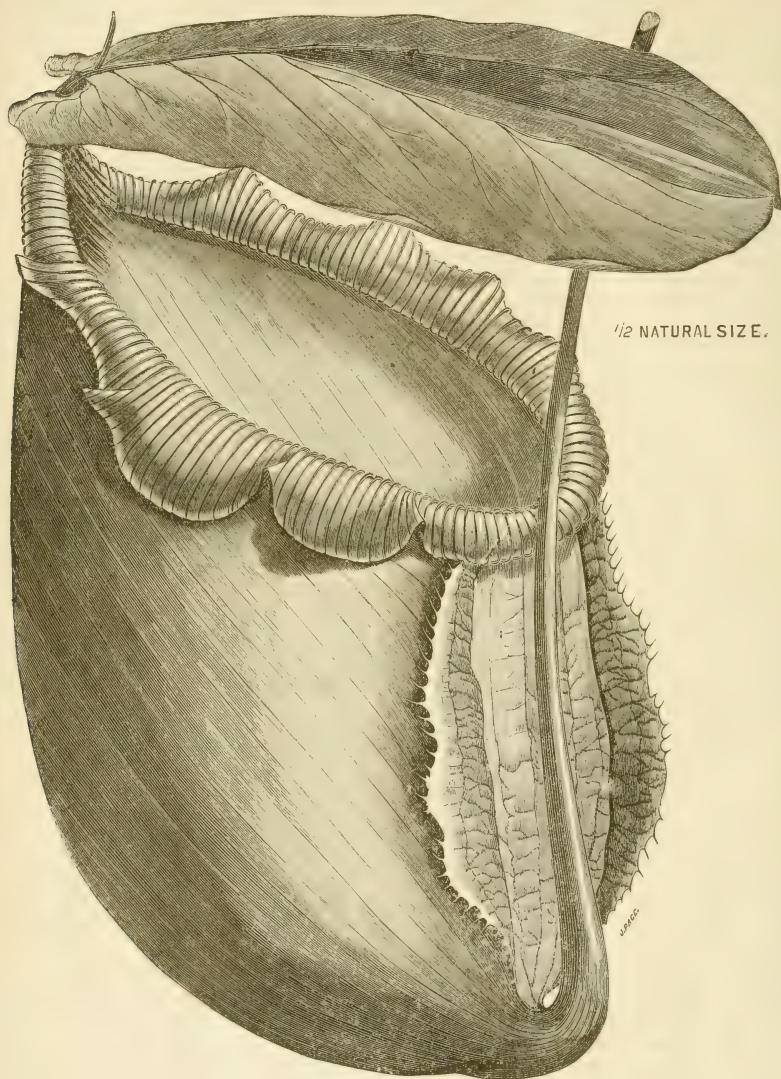
BY R. SMITH.

The Pitcher Plants (*Nepenthes*) form the only known genus or family of the botanical order *Nepenthaceæ*. They are wonderful and beautiful children of Nature, and richly reward examination. There are about twenty members of the family at present known. They are nearly all natives of the tropics of Asia—especially of India and China. In the islands of Borneo and Sumatra, where Nature delights to bear some of her rarest and most wonderful offspring, they are found in shallow swamps in the greatest abundance. A very beautiful species and perhaps the best known of all the *Nepenthes*, *N. distillatoria*, is a native of Ceylon. Two species have been found in Madagascar.

Wherever *Nepenthes* are exhibited they attract attention. The writer has often seen crowds gathered round a few specimens on horticultural exhibition tables gazing at them with wonder and interest. Certainly they deserve examination; for with their fresh, bright green leaves, and richly spotted appendages hanging so lightly, they are indeed beautiful objects. Botanists, perhaps from the scarcity of plants to examine, have not investigated their habits and the functions of their various parts as they deserve, and much yet remains for explanation.

The pitcher-like appendages from which the name "Pitcher Plant" is derived, are supported by a stalk rising from the apex of the leaf, and in some plants measure as much as twelve inches long. The petiole or leaf-stalk is contracted at its base, but higher expands into a flat limb which some botanists term the leaf, others only an expansion of the leaf-stalk. The midrib of this limb or leaf is prolonged, and from it springs a leafy expansion like a pitcher both in shape and capacity for holding water. The pitcher is supplied with a cover or lid attached by a perfectly working hinge, which in the young plant opens at

the approach of morning and gradually shuts as the fluid is insipid, in others, sweet. When heated the twilight passes into night. As the plant grows or boiled an odor like that from baked apples



1/2 NATURAL SIZE.

Nepenthes Rajah.

older this lid remains constantly open. Inside the rises, and when evaporated a residuum of minute pitcher a watery fluid is secreted. In some species crystals of binoxalate of potash remains. The

fluid rises into the pitcher by means of small glands or cells at the base, and is present in sufficient quantity to drown flies and other small insects which enter the goblet searching for nectar. Some investigators assert that the plant draws nourishment from the bodies of insects entrapped in the pitcher. This, however, is disputed by others. In some plants under the writer's observation, he noticed that the bodies of flies, gnats and other insects quickly disappeared as if dissolved by the action of the exudation. It is exceedingly probable that Nature has supplied the *Nepenthes* with this means of procuring nourishment, as the pitcher forms a perfect and successful trap for the smaller kinds of insects, and few of them succeed in escaping when once they have entered the (to them) deadly goblet.

The species of *Nepenthes* chiefly cultivated in hot-houses, as being the finest and most easily grown, are *N. distillatoria*, *N. ampullacea*, and *N. Rafflesiana*. The latter is a very fine species, and was discovered about forty years ago, in Singapore by the Eastern traveller, Sir Stamford Raffles, from whom it has received its specific name.

The largest and most beautiful *Nepenthes* yet discovered, however, is one found in Borneo some years ago, and named by Dr. Hooker, of Kew Gardens, England, *Nepenthes Rajah*, in honor of Sir James Brooke, Rajah of Sarawak when the plant was discovered. The pitcher of this species sometimes measures twelve inches long by six inches broad. The stalk by which the pitcher is attached to the plant is as thick as a man's middle finger. It is a pity that no living plant of this magnificent *Nepenthes* has yet been brought to America or Britain, but a dried specimen may be seen in the Herbarium of Kew Gardens, which will well repay a few minutes' examination, by those who visit that realm of wonders more astonishing and enchanting than all the airy fancies of the wonder-land of our forefathers.

4331 Germantown Ave., Philadelphia.

[The "*Rajah*" has been introduced by the famous firm of Veitch & Sons, of Chelsea, England, and we give an illustration of it with the article.

No one seems to know why Linnæus gave the name *Nepenthes* to the genus,—the name being Greek for a poisonous draught given in connection with one of the stories connected with the famous Helen of Troy. It was a sort of pleasant opiate, that led the anxious head to lie down to pleasant dreams. Whether the insects that find their fate in these pitchers sleep themselves pleasantly away to their final resting place, and may have given

the hint for the name to Linnæus, we do not know, or whether there has been anything in its history to suggest the *Nepenthes* draught.—Ed. G. M.

COST OF SMALL BOILERS.

BY DR. J. H. PURDY.

The communication of Loring W. Puffer in the August MONTHLY, relating to heating small greenhouses, is full of sound sense, and a good article in every particular with the exception of the last sentence, where he says, "*One of Hitchings' 'boilers' that would do the same work would cost about one hundred and fifty dollars.*" This is such a glaring mistake that it is due Mr. Hitchings, as well as the readers of the MONTHLY, to set them right in the matter.

Several years ago it occurred to me that if hot water was a good heater of greenhouses, the same method could be applied to the heating of my offices, of which I have three in a suite, containing in the aggregate, six thousand cubic feet, the greater part facing north. I purchased from Hitchings a No. 3 Base Burning Water Heater for heating small greenhouses, paying him for the same sixty-five dollars. I put it up in a little room in one corner of the office and attached five hundred feet of 1¼ inch gas pipe. I have always been perfectly satisfied with its work; the fire is never out from fall to spring, and the temperature can be kept up to 70° or 80° at times when zero or much lower prevails outside. The average consumption of coal is fifty pounds per day. A small base burner by Hitchings, warranted to heat a conservatory of three thousand feet, costs forty-five dollars, just one dollar more than the home-made one of Mr. Puffer. I have purchased several of these for my neighbors, and know the price. They are as easy to operate as a parlor stove and need very little attention, and while there may be many others in the market equally as good, my experience is limited to only one kind which gives perfect satisfaction.

Seneca Falls, N. Y.

[The paper of Dr. Puffer was, as stated, a reproduction. Having been written many years ago, it was not noted, as in justice it might have been by the Editor, that the cost of these articles has been much reduced of late years.—Ed. G. M.]

EDITORIAL NOTES.

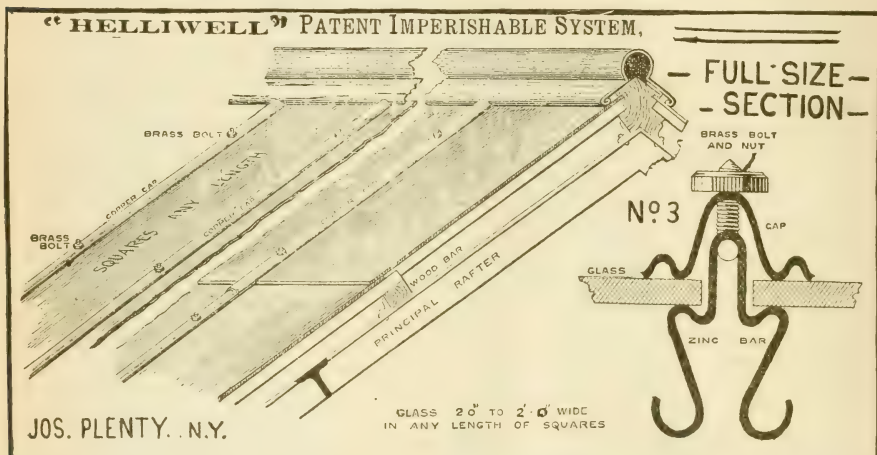
IRON OR STEEL GREENHOUSES.—A circular of the Manly & Cooper Manufacturing Company,

respecting iron greenhouses, leads us to inquire of our readers what has been the experience of any of them of late years. They are in favorable use in some parts of the Old World, but have never become popular here. In old times, when the glass was puttied in, one would readily believe, in our very cold and very hot country, the expansion and contraction of the metal would crack the putty and induce leakage,—but, with the many contrivances for avoiding putty, that might not be an objection now. Possibly the heat would pass away too rapidly in cold weather, through the conducting power of the metal; but if this be an objection, there ought to

but the deeper yellow Perles and Sunsets, have become popular, and some recent funerals in high society have even shown pieces made of the deep-colored Jacqueminot roses.

"Perhaps there is a change in the sentiment as well as in the color. White flowers suggest the cold ceremonies of the grave; colored ones, the bright fields of Paradise."

GLAZING WITHOUT PUTTY.—In our May number we made the remark that the quality of putty was of no consequence to greenhouse builders as it is no longer used on the best work. This assertion of ours has evoked a good deal of criticism, and has brought us considerable correspondence, and finding it impossible to answer all of the in-



be the merit of durability to iron. Some years ago the Resor iron conservatory, near Cincinnati, was regarded as a great success. It would be interesting to know if it still exists.

COLORS FLOWERS AT FUNERALS.—The following is taken from the advertisement of a Philadelphia florist in a city paper. It has ever been a puzzle with intelligent people that black should be a mourning color for dresses and funeral accompaniments, while the flowers should be purely white:

"It is noticeable that the popular taste is running more and more toward the use of colored flowers in funeral pieces. A few years ago nothing but pure white was tolerated. One day Pennock Bros. sent out a pillow with a few Safrano buds in it, only to have it returned by the indignant recipient.

"Since that time, however, not only Safranoses,

quiries in the usual way, we decided to devote an article to the subject. The principal objections to glazing without putty are summed up in a recent work on "Horticultural Buildings," by Mr. Fawkes, of Crompton & Fawkes, London, England, which we quote:

"In glazing without putty the glass usually comes in contact with metal and a certain amount of play is allowed—hot air has abundant opportunities to escape; houses cannot be properly fumigated; crevices for the retention of water by capillary attraction abound; subsequent freezing of this water, and constant breakage are liable; and the crevices also harbor insects; and also the possibility is precluded of placing a board or ladder on the outside of the roof," and the cost is greater than with putty glazing."

There are several systems of glazing without putty in vogue here, one of which has been extensively advertised, used on some important work,

and has had ample time to practically prove its merits or otherwise; another, which, although largely used in England and elsewhere for some years, has only recently been introduced in the United States, and seems to us to be the most perfect system of puttyless glazing yet invented; as the inventor has successfully met and overcome



Showing the lap of the Glass.

- A Top Light of Glass
- B Condensation Bar
- C Bottom Light
- D Space for Condensation
- E Metal Cap to Top Light
- F Metal Bar with Double Gutters
- G Metal Cap for Lower Light

such a shape that it has a great deal of elasticity, while it can be screwed down so tight that there is no play or rattle allowed to the glass, and it can be made absolutely air tight, keeping in the heated air and excluding all dust; and for the same reasons the house can be fumigated more readily than if glazed with putty; the glass is in much larger panes or lights, than usually used, giving greatly increased light and offering fewer crevices for the retention of water by capillary attraction and consequently offering less opportunities of freezing and breakage from this cause; while the elasticity of the shape of the metal, as before mentioned, allows it to yield to a steady pressure like the power of frost and afterwards return to its original position; there are no crevices for the harboring of insects at the junction or lapping of the glass, while the drip is effectually provided against; the bars are sufficiently strong to bear a ladder on the outside of the roof; indeed, with a few short pieces of boards, a man can walk over any part of the roof without danger. It is an old and trite maxim that the best is the cheapest, and although the first cost may be more than putty glazing on wooden bars, we must take into consideration the extra cost of large lights, 20x48 inches, over 9x12 inches, as usually used, as part of this cost; then comes the fact that it is there to stay, and to be at the end of twenty years as good as when put on; while we all know the constant source of expense our puttied roofs are. Our friend, J. N. May, Summit, N. J., is just renewing entirely some houses built only about

seven years ago, and we certainly think that the house of the future will be of light iron construction, well built and properly proportioned for expansion and contraction, and glazed with a system of this kind, or better if we can get it.

So far as we can understand the system introduced by Mr. Jos. Plenty, of 144 Pearl St., New York, it is a great advance on others in existence. We have obtained from him the cuts to illustrate this article, and a reference to his publications will give further information about it.

Aside from these methods of glazing houses, where the best and the cheapest methods are desirable, putty is rarely used, even by that class of unfortunate florists who have to do their own work, though it costs more than if they could afford to employ others to give them the best methods on a larger scale. They use a mixture of whitening and oil to bed the glass on the rabbets, so that there shall be no space for the collection of moisture, which the slight overlapping would otherwise make. The glass is fastened by glaziers' triangular tin brads, and then the whole upper space, usually finished with putty, is neatly painted. We believe the florist would be considered very far behind the age, who used putty on the outside of even a common hot-bed sash.

GAS-TAR ON HOT-WATER PIPES.—Does any one know why people gas-tar hot-water pipes? This question is equal in importance to the one, "how to get it off again?" We note that in England, the early fount of horticultural intelligence, the editors have to grapple with the same question, —and one replies: "Paint the pipes with sulphuric acid; allow it to remain on 24 hours, and then wash off with lime-water. Nothing short of this is of the slightest use."

SCRAPS AND QUERIES.

CULTURE OF ASPARAGUS TENUISSIMUS.—"Mrs. H. L. D.," Ketchum, Idaho, writes: "Will you please give me information in next issue of *GARDENERS' MONTHLY* in regard to soil, temperature, etc., of *Asparagus tenuissimus*? I have had one two years and never saw one word published in reference to its treatment. Mine will not grow. The lily, *Calochortus venustus*, illustrated in July number, grows wild all over this valley, as well as an innumerable number of other plants."

[In this part of the world it thrives very well treated as a cool greenhouse plant. It dislikes a

high temperature. If the pot is well drained, it will take a large supply of moisture with seeming pleasure. Any light, sandy soil seems suited to its desires. If any of our correspondents have had special excellence in growing it, we are sure many readers besides the lady who inquires would be glad to learn the particulars. The reason that no

article on its culture has hitherto been given probably is that it is generally considered very easy to grow.

It was thought, when first introduced, that it would become famous among florists for cutting, like the *Myrsiphyllum*, or *Smilax*; but it has not far advanced in that direction yet.—Ed. G. M.]

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

We were telling an old amateur gardener recently, whose back seemed almost breaking with the heavy work of earthing up celery, that there was little need of such hard labor in these days. There were the self-blanching kinds and the kinds that you could tie up and blanch, like endive or lettuce,—and at any rate, the dwarf kinds, that at most required but one or two earthings a year. "Bet your life they're no good," responded this horny-handed son of toil; and he went on with his earnest task, piling up the earth till the row looked like the steep, slated roof of a modern church. He will so keep on, once a week, till the frost puts an end to his task. Certainly some of the celery work of these fond old-time growers is of a remarkable character. Stalks as long and as thick as one's arm, and with loads of clear, white, solid, crisp material—stalks that they have spent a whole lifetime in studying just how to produce—it is no wonder the conservatives in horticulture are not ready to lie down and die at once when a radical shows his head.

In fruits as well as in vegetables, those who have spent years in studying just how to do it look on in pity at the one who searches for the royal road to fruit culture—the road along which one may jauntily saunter, gathering the ripe and delicious fruit just as it is ready, with no trouble on his part but to pluck and eat. We pointed out to one of these old-fashioned gardeners a paragraph from a western paper—"Keifer Pear a Humbug,—tasteless and useless even for hogs!" "Bet yer life!" said this same old boy, "that one is too lazy to take some trouble to have them good. I could show plenty of pears in my garden not fit for hogs, if I let them all be treated alike. Every kind of pear has its distinct requirement—one you can

leave on the tree till it is ripe enough to eat, another you must pick a week ahead if you want to have a right good mouthful out of it. Some you may let lie on a board in the sun, and it will give you perfection, while another kind will insist on being put in a dark closet, or even wrapped in a blanket, before it will be fit for any but a pig to eat. Any body, as you know, can go to old man Keifer, and he will give you one from his pear cellar that will make you fear to eat a pear of any kind forever after, lest the pleasure that luxury has given you in eating a pear that is a pear, should be dispelled. When a man says Keifer pear is a humbug, it shows he doesn't know anything, or don't care to take the trouble to practice what he knows about ripening pears." There may be some truth among this severe judgment. True it is that Mr. Keifer, a plain old Alsatian gardener, and yet with a thorough knowledge of gardening, obtained in France and Germany, that is rare in our time,—who is abundantly satisfied with his own share of the world's goods, and probably never made a dollar out of his famous seedling,—who does not care whether anybody likes his pear or does not like it,—he will give you a Keifer pear, as our friend says, "from his pear cellar," that will make you feel that you never knew before that a pear could produce a fruit so lovable.

All these things go to show that gathering, storing, and ripening pears, is an art that cannot be taught, and yet it is a branch of knowledge that will often decide whether any one kind of fruit is not fit for a pig, or one which the highest lady in our land might be proud to set before her guests.

There would seem to be little new in the way of practical hints from year to year; what is found true once should be true for all time. But fruit growing is a complicated affair. Things are only relatively true, and, as circumstances vary, so do

rules. Take fall planting trees, fall pruning, planting of large or small trees, and similar questions. There has surely been great gain. Everybody knew that, as an abstract question, it was best to plant any kind of tree in the fall. The old arguments for it were good enough. It was said that the ground was warm, roots healed, often new fibres would form, and the trees were just ready to push into growth when the growing time came. This is all true. But in practice it was found that stems evaporated moisture in a drying time, as much as they would with leaves in winter. A tree exposed to keen, frosty winds, is, therefore, at a disadvantage when it has lost many roots by transplanting. So the rule came down to this, that where the tree could be put where the roots would soon heal, where the winter would not likely be very severe, where the tree itself had good roots, and these not injured by too much drying before planting, where shelter from drying winds could be afforded, and so forth, it was a very good thing to plant in fall. But when we look at the risks of spring planting,—the tree called into growth before new roots are formed, hot, drying summer winds, summer drouths and other contingencies, the conclusion of the observant man is that on the whole one season is no better than another, and "plant when you are ready" has become the rule. But progress has been made in getting some of the advantages without the risks. In fruit trees particularly, now, many who want to plant in spring, buy in the fall, and plant all temporarily thickly together, no matter if the stems are a foot or more deep in the ground, in some nook sheltered from drying winds. Here they remain till spring, sheltering one another, as well as being sheltered. The advantage is that the wounded roots heal over, and when replanted in spring, push into growth a couple of weeks before those then freshly taken up. Besides this, there is the great advantage of having them on hand to plant just when you are ready, instead of having them rushed in just as something else is sure to demand immediate attention. It does not take much time. Hundreds can be thus thickly planted in a few hours. Even when trees come in spring, almost as much time has to be taken in "healing in" to save till we are quite ready, and the imperfect manner of healing in usually destroys large numbers, though "very carefully planted by an experienced person," as the complaint to the vendor usually reads.

And "carefully planted" has new meanings as knowledge progresses,—as in treatment of animals kindness is often cruelty. The "deep hole," "soft

earth pressed about by the fingers," the "copious watering" or "puddling of roots," useful sometimes, just as often kill the trees. The perfection of good morals in tree planting is, to do it when the ground will powder and not paste—as soon as there has been dirt enough put in to somewhat cover the roots, pull the tree up and down a little to encourage the earth to jolt into every little hole and cranny, then fill in and pound down the earth as tightly as possible. Prune out all the weak shoots and shorten the stronger ones. This is good planting, and unless a tree is dried up before setting in, not one in a thousand has much chance of losing its life.

And about large trees. They do just as well as small ones, provided they are very healthy, and are taken up with all the roots that can reasonably be taken, planted as we have described and pruned in the same manner. After a tree has once come freely into bearing, and its growing powers thereby checked somewhat, it has not the same chance as a really growing tree—growing in the full sense of the word—but until this time arrives the planter may safely use the larger trees.



COMMUNICATIONS.

BLANCHING CELERY.

BY DAVID N. MORGAN.

I have for two seasons practiced the following plan for handling celery preparatory for winter keeping: I take a ball of strong cotton wick, and gathering up the stalks of the end plant of a row, tie the wick around it. Then without cutting the wick, take a turn around the stalks of the next and each succeeding plant without tying, and so continue till the ball is used up. When the end of the wick is reached, I either tie it to the end of another ball of wick, or secure it around the plant. When the celery is taken up, the wick can be unwound and preserved for future use. To me this plan has been more effectual in keeping the stalk together, and easier to follow, than that of pulling earth to the plant.

Camden, N. J.

SOLID CELERY.

BY PETER HENDERSON.

I notice in the June number your quotation from a correspondent of the *London Garden*, wherein the writer takes the ground that hollow or pipy celery is always the consequence of using seed of some worthless kind. That this is true in general,

there can be no question, as a most extensive practice in growing and testing the different kinds of celeries well proves; but our experience also has proved that on stiff heavy soils the same variety of celery will be specifically heavier than on boggy soils formed mainly from leafy deposits. I first discovered this some twenty years ago. We had two places in which we grew celery, one, leafy deposit and the other heavy clay loam, and in marketing the crop, we found, which was nearly of the same bulk, that that on the clayey loam, was nearly one-third heavier than that grown on the leafy mould soil. All giant or tall-growing celeries should be avoided; as a rule they are always more hollow, give twice the labor to work, are inferior in flavor to the dwarf-growing sorts, and under the same conditions, rarely give as much weight of crop. No market gardener that knows his business, ever grows the "giant" celeries here now.

DOWNING'S EVERBEARING MULBERRY.

BY J. M.

There are but few persons who know what a good thing this mulberry is. Owing to the efforts made to introduce the *Morus alba* for silk-worm culture, many more of this sort are met with than of any other, and the general idea of what a mulberry tastes like, is founded on experience with it. This is to be regretted, for the Downing's mulberry is an entirely different fruit from the *alba*. While the latter is over-sweet, having what is commonly termed a "sickly taste," the Downing's has a pleasant tartness which is very agreeable to the palate, being besides, a much larger fruit. Unlike the *alba*, which ripens its fruit all at once, the Downing's continues to ripen for a long time, commencing about the end of June and ending towards the close of July, in the neighborhood of Philadelphia.

Mulberries are often grown in bush form, but in the case of the Downing's, at least, this is a mistake, as when in tree form it forms a shapely head, which together with its large leaves, make it valuable as a shade tree.

Philadelphia.

EDITORIAL NOTES.

BEES INJURING GRAPES.—It is still contended that bees do not injure grapes or other fruits. It is not denied that they eat the fruit, but "something" else must puncture the skin to enable them to do

so. If the "puncture" does not hurt the fruit, only permits the grape to be eaten that would otherwise not be eaten, we do not see much value in the argument. In this neighborhood we know of vines that have had their whole product carried away by bees, only those bunches being saved to the grower that were enclosed in bags. It is not how the "puncture" is caused that worries the grape grower here—it is the actual carrying off of the fruit that troubles him so sorely.

FIRMING THE SOIL.—Considering that the best farmers so long knew the advantage of rolling their fields after seed-sowing, it was always a matter of surprise that the practice had never become part of good gardening, and still more of a surprise when Mr. Henderson's paper on firming the soil appeared in our columns, at the objections some made against it. Yet the evidences of the value of such a practice could be stumbled against almost any day. The *American Agriculturist* recently gives an illustration of this, which is worth repeating here:

"Peter Henderson, the author of 'Gardening for Profit,' in insisting upon the great importance of firming the soil over seeds and plants, writes us: 'It was rather an amusing incident that first brought to the attention of a truck farmer, of Charleston, S. C., the importance of firming the soil. It seems that a gentleman of color, having the constitutional weakness for chickens peculiar to some of his race, got into a hen-roost and helped himself bountifully. In evading the high-road, he struck a bee-line through a newly sown turnip field, where he left tracks that led to his detection. But these tracks did more. They showed to Squire Buncombe, whose chickens had suffered, that wherever the foot of the colored citizen had fallen, there he had a "stand" of turnips, and nowhere else (for they had been loosely sown and the weather was dry). The lesson was heeded, and has been worth tens of thousands of dollars to the farmers of South Carolina, who, it seems, were never before sufficiently alive to the importance of firming the soil until the unfortunate negro showed them the way.'"

WHORTLEBERRIES.—Some time since we warned our readers that the engraving attached to circulars of some Western nurseries, regarding whortleberries, was not a whortleberry, but the dwarf June-berry. We note that Mr. Samuel Miller tells the *Rural World* that June-berries are often sold for whortleberries in the west. The people who buy them are usually those who complain of too much science in horticultural magazines.

DWARF JUNE BERRY.—The selling of the Dwarf June-berry for the huckleberry, by some Western nurseryman, is evidently due more to ignorance

than with an intention to defraud. Before us is a catalogue of a nurseryman, who has a very good reputation, at Plymouth, Indiana, who gives a cut of his "huckleberry." He evidently does not know that his picture is only the June-berry.

PRICE OF SMALL FRUITS.—In Philadelphia during the first week in August, the wholesale price of blackberries was about 6 cents a quart; currants, 4 cents; huckleberries, 6 cents; Southern Damsons, 5 cents; Virginia Concord grapes, 5 cents, and Southern Niagaras, 8 cents per pound.

PEACHES IN PHILADELPHIA MARKETS.—At this writing, first week in August, one of the heaviest peach seasons known is anticipated, 2,000,000 bushels alone being expected from Maryland. Delaware expects to market less than usual. The value of fine fruit, in comparison with poor stuff, was well illustrated by the market rates during the first week in August. While the average "early" peaches were bringing 75 cents a basket (two-thirds of a bushel), Mountain Rose sold readily at \$2.

GOOSEBERRIES IN WASHINGTON TERRITORY.—The English gooseberry is found to thrive admirably in Washington Territory. Some seedlings have been raised which rival the imported varieties. Puyallup Mammoth has a good reputation.

THE NEW STRAWBERRIES.—Mr. E. Williams, one of the most careful and conscientious of experimenters, gives to the *Weekly Press* an account of his experience with a large number of the newer strawberries. Something is deficient in most of them. The older Crescent and the Jersey Queen receive the fullest measure of his commendation.

NIAGARA GRAPE.—These appeared in Philadelphia markets in company with Concords, from South Carolina growers, on the 30th of July, and seemed much appreciated. The wholesale price of the Concords was 10 cents per pound. The Niagara found ready sale at 12 cents.

FAY'S PROLIFIC CURRANT.—A correspondent, residing near Philadelphia, and who has remarkable success in currant culture, says: "My Versailles this year were the wonder of all beholders. To say that they were as large as cherries is no exaggeration, and the bunches are much longer than the famed cherry currant. Fay's Prolific was not near as fine, but my plant is young, and it may do better when older." We should be glad to hear of the experience of others who have older plants.

GOLDEN QUEEN RASPBERRY.—This was found on the grounds of Ezra Stokes, of Camden county, New Jersey, among a 12-acre block of Cuthbert. It resembles that variety in all but its bright color. Like all light-colored varieties, the flavor is preferred by most tastes to the darker kinds.

CRIMSON CLUSTER STRAWBERRY.—It is said that berries of this variety have been produced nearly seven inches in circumference. This is very good for a round strawberry. The cockscomb-formed fruit we may sometimes find with enormous figures, but with little actual fruit.

THE DELAWARE WINTER APPLE.—This is a variety being introduced by Mr. Corsa, of Delaware. Besides being a remarkably good keeper, having been found of good quality in June, it is remarkable as an early bearer, trees but a few years old bearing profusely.

This is a point that has not received the attention of those interested in profitable orchard culture that it deserves. If one can get a full crop from an orchard in five or ten years, why wait for those that take fifteen or twenty?

POTATO DISEASE.—This has been more virulent than usual in Eastern Pennsylvania, this year; but not so very destructive as it has been in some seasons. Possibly an average of a fourth or fifth of the foliage was destroyed, not, however, in many cases reaching to the main stems. Still, there was enough to give notice to people of smell, that fermentation in the leaves through the fungus attacks, was going on. And we shall probably hear of potatoes rotting badly before the autumn closes.

SCRAPS AND QUERIES.

TRANSPLANTING WILD BLACKBERRIES.—"F. B., Cannelton, Pa., has a very fine blackberry wild; also, a white variety with it, that he desires to remove to his garden in fall. It will be very important to separate them carefully, to prevent mixture. To this end, the stems of each should be marked now, and as soon as the leaves change color in fall, dig them up and carefully wash out the earth, so as to see certainly the separate root attachments. If propagation is desired, dig out as wide a space as possible; as the plant is propagated by pieces of the root, and every piece is of value. Pieces about two inches long will do, and these may be cut and set horizontally, at a depth of two or three inches beneath the surface, in any light soil where the water will not lie during

winter. In wet soil, the pieces may rot. The stems themselves, after the roots are cut away for propagation, may be cut to the ground, and these stumps planted in the garden, covering them with earth or other material (to be drawn away in spring), the object being to keep the plants from being lifted out of the ground by frost.

BACTERIA AND PEAR BLIGHT.—"A. N.," Chicago, Ill., writes: "In this State, pear blight has always been very destructive. There are some old trees, but millions have been swept away, where these have grown.

"Perhaps after we know the cause, we may not get the remedy. But we do not know that we will not, therefore we desire to learn the cause whatever it be. For my part, I have been inclined, of late, to the bacterial theory, and yet there are some considerations that make me hesitate. In one of your letters you told me, that the fire blight is almost unknown in Germantown. But I suppose the microscope could show myriads of bacteria. Why don't these creatures plague you as they plague an Illinoisian? Do they hesitate to tackle the Editor of the *Gardeners' Monthly*? And England swarms with bacteria, if we may credit the scientific journals. Why don't they bother the English pear-grower? I believe nothing of the kind was ever heard of there." To all of which we can only say, that if it can be proved that bacteria do cause the disease, it is no argument that they do not cause the disease, because it is not seen in England. Still the freedom of England under the circumstances, would be remarkable.

FRUITING OF ENGLISH HAZEL AND FILBERT TREES.—"C.," Villa Nova, Pa., says: "Can you give me information in regard to an English hazel-nut tree or trees. The owner complains of their never having borne, but this year they have quite a quantity on. He got them from a tree which he thinks came over from England, and he says bore quantities of nuts, and wants to know why his do not. They are in quite a clump, some of 15 to 20 feet high, and seem perfectly healthy. Would summer pruning do them good, or is it the fault of imperfect fertilization?"

[The failure of the hazel-nut to perfect seed some seasons in America, is due to imperfect fertilization. A few warm days in winter, will bring forward the male flowers (catkins), and they thus mature, often many weeks before the minute female flowers are ready to receive the pollen. When the latter is in bloom, there is nothing to fertilize them with. This season, it is a matter of

record, that the male and female flowers bloomed simultaneously; hence the full crop. On the writer's grounds, trees are loaded that had not a nut for two years before. This fact has been noted years ago, and is referred to in a paper in the transactions of the Royal Horticultural Society. The suggestion is there made, that when this difference in time occurs, male flowering branches at maturity may be wrapped in paper, kept dry, and when the female flowers appear, be hung in and among the trees. Then a crop of nuts follows.—Ed. G. M.]

SEEDLING CHERRY SPECIMENS FROM J. G. BURROW, FISHKILL, N. Y.—It is not possible in these days, when varieties are so abundant, to give the value of a new one from specimens alone. Merits must be comparative; and only the competitors, growing side by side, will furnish the evidence required. In this instance, Late Duke would be the probable competitor. The stems are longer and more slender, which is a good mark of distinction. The fruit is of about the same size, color and flavor. The Late Duke, however, we have never regarded as a very abundant bearer; this one seems to bear profusely. There are twenty cherries on the 6-inch branch sent us. We are inclined to believe that it has some superior merit to Late Duke, and if this proves to be a fact, it will certainly prove a desirable variety.

ENGLISH GOOSEBERRIES.—A correspondent from Taunton, Bristol Co., Mass., writes: "I take the liberty to send you, by to-day's mail, some sample gooseberries, for your opinion. From the original bush, which was on my place when purchased, forty years ago, I picked in July, 1884, twenty-three quarts of green berries. This year, the dry spell came just at the growing time; still, two weeks ago, from the old bush and three smaller ones, I gathered forty quarts. The bush has never failed to produce an abundant crop of berries; nor has it ever showed the least sign of mildew. In fact, I should never have known that gooseberries were afflicted with that blight, had I not read of it in horticultural works.

"The berries I send, have had no special culture. Such work is out of my line; still I am confident, had there been any, that the fruit would have been very much larger. You will see they are not quite ripe nor full grown now; still you can judge something about them. Is it a fruit worth anything? Is it more than ordinary?"

[This is one of the race of English gooseberries;

much larger than are usually seen in this country, but not larger, or as large, as the same variety would probably be grown in the old world. The varieties there are so numerous, that it is impossible to say whether or not this is a seedling different from one of them. It is most likely one that has long been named and introduced from the old world.

It may be well here to remark, that an idea prevails, that the English gooseberry always mildews in America; and so, when one gets a plant that has not yet had mildew, the owner believes it is either of the American race of gooseberries, or that he is the lucky possessor of an English variety that will not mildew, that it must of necessity be a new kind. The fact is, the English gooseberry only mildews in America when it is grown in situations exposed to a long hot summer's sun. Wherever the soil is cool, or the sun kept from the plants by buildings or fences, the English gooseberry does very well. In Canada, the northeastern parts of the United States, or anywhere south in shady places at high elevations, it succeeds. In the coal regions of Pennsylvania, where the miners are English, they introduce and grow the favorite fruit of their old homes, and cultivate them with great success. Here in Germantown, a locality once settled by Germans, but now chiefly in the hands of the English and Scotch, or their immediate descendants, the favorite English gooseberry is very successful in the small shaded yards of the artisans; but it mildews when in the larger gardens of the wealthy, where the extent permits an all-day sun to heat the ground.

There is no reason why the English gooseberry should not be grown in every garden. It is the art of the gardener to suit his plant to the requirements of nature. He does not plant potatoes just before frost, or set out egg-plants or tomatoes, at times when he would plant cabbages or sow turnips, and when they get frozen declare that "they cannot be grown here." Yet he takes a gooseberry that requires a damp atmosphere, a shady place, cool soil, and plenty of decaying vegetable manure, and places it in the full sun, where only a sweet potato would grow without grumbling, and because it mildews now and then, it is pronounced unfit for American fruit gardens.

We publish our correspondent's letter, because it shows how easily it can be grown, when the right place is found for it. The dissemination of the Industry, Triumph, and others of the English race, recently, is doing much to make the merits of this delicious fruit known; and we expect to

see, by proper attention to the requirements of good culture, the English gooseberry successfully grown in every amateur garden that has any pretension to excellence.—Ed. G. M.]

GRAFTING QUINCE ON THE THORN.—In our last there was an inquiry about grafting the Quince on the Crataegus or Hawthorn.

Mr. Thos. J. Edge, Secretary of the Pennsylvania State Board of Agriculture, kindly furnishes the following minute from the proceedings of the State Board at a recent meeting at Bloomsburg in this State:

Mr. H. H. Brown, of Light Street, P. O., Columbia Co., said: "I have succeeded very well in raising the quince by grafting upon the White thorn. White thorn, as you know, will grow anywhere. It does not need clay soil, but will do well on loam, gravel, or anything else. I have one stock that has grown seven years, and it came into bearing in three years. I have quinces this way the second year after grafting. My mode is to grow trees, say one inch in diameter, and then cut them so that they are three or four feet high, and let them sprout, and next year whip-graft them. I have attempted cleft grafting, but after the graft begins to grow it 'turns in the bark' and lifts the graft out. I only succeeded in getting one out of twenty in this way. The next year I whip-grafted with complete success. I have raised excellent quinces by this method."

KELSEY'S JAPAN PLUM.—"W. F. B.," says:

"If any disinterested person has fruited Kelsey's Japan Plum, I would like a full report of it. If it will bear freely when the curculio destroys the European varieties and the quality compares favorably with them, I would like to graft some large trees, but if it is, like the American varieties, considered good because we cannot raise better, I do not care to take much trouble about it."

[This plum is equal in quality to any of the best of the European race. Like them, it will be attacked by curculio, and like them, it will be a very desirable kind to grow if the best modern methods of shaking or jarring the trees for the capture of the insect, be persisted in.—Ed. G. M.]

RASPBERRIES FOR MASSACHUSETTS.—"W. H. F.," Wood's Holl, Mass., writes: "You would oblige 'W. H. F.' very much if you would let me know in your next number of the GARDENERS' MONTHLY, which are the best raspberries for an exposed place; give me two or three varieties."

[Any variety of the Red or Black cap raspberry would be hardy with you, so long as they were

not exposed to hot dry suns. In such places they get their life power weakened, and are then "tender," and die in winter. Of the Red varieties, Franconia is the best for exposed places in Mass. Then you may add Cuthbert, and if a light-colored one is desirable, Caroline. Of the Black cap class, Souhegan is the most popular in that section, and, though the Gregg has not been widely grown in Massachusetts, it is worth planting, we think.—Ed. G. M.]

FORESTRY.

EDITORIAL NOTES.

AMERICAN TREES FOR AMERICAN PLANTING.—

A correspondent says: "Note in N. Y. *Tribune* of last Monday, July 9, a criticism of Sargent's notes on trees, and the writer's own opinion of the worthlessness of foreign ornamental trees. The last part of the article is very remarkable."

[Our daily papers have improved in many respects of late years,—but in the matter of technical affairs they have generally deteriorated, and have little or no influence. Smart young men, fresh from the High School, will furnish an article very readable, on any subject under the sun, on five minutes' notice. They are perused with pleasure one moment and the next forgotten. This particular paper with the "Know-Nothing" title quoted, is purely of this species, and only that it has troubled our correspondent, who is an eminent tree-lover and tree-planter, it would hardly be worth notice at this long date after printing.]

The author of the paper tells us that "no tree will thrive under other climatal conditions than those which prevail in its original habitat." One would have to know what is meant by "climatal conditions" and "original habitat," and particularly what is meant by "thrive," before affirming or denying these propositions. We saw recently a magnificent mass of English beeches, nearly a century old, on grounds near Philadelphia, quite equal to any of the same age seen in the North of Europe. But perhaps they are not "thriving" as the author means; or in his estimation the "climatal conditions" between Philadelphia and Norway or England may be the same. Then we are told that the Norway spruce is no good for American forestry,—"not half a dozen remain of those originally used in the Central Park." The Central Park is rather a limited locality to decide questions of "American" Forestry.

Some have thought that Japan trees might be useful in American Forestry,—but this gentleman has no such an idea, because "they have not yet been grown in sufficient abundance to serve any economic purpose." If a few dozen trees can be grown successfully "in Central Park,"—grown rapidly in soil that suits them, and the timber is just what we want,—Why not grow a million as well? "The Larch was considered the timber tree of greatest promise years ago." True, and if we take an alpine tree from its rocky loves, and set it down on the sea level, in a soil that it hates, why should its removal to "America" be the sole cause of its failure? "It will grow quickly on thin soils, but so will White Pine." Certainly; no one will under-rate White Pine. But there are certainly places in "America" where Larch would have a better chance to succeed than White Pine would; admitting, of course, that "Central Park" is not "America." The "Chestnut is superior to the Larch." No doubt, when you have it on limestone soils, or soils just suited to it—for it is very nice in its exactions—but there are millions of acres in "America" where first-class Larch could be had, that would not give a solitary chestnut post. The statement that "in the Eastern States the effort to acclimate foreign trees looks like a waste of energy." Here again it would be necessary to get a definition of "acclimate." There are millions of foreign trees growing in the "Eastern States,"—we do not mean Central Park merely—that seem to us as fairly "acclimated" as any native trees.

The idea that an ornamental tree must be in some of its features distinct from a common tree that furnishes "fuel and timber," is not by any means a prevalent idea. In fact, we have never heard, in all our long experience, any one object to a tree that had real beauty being planted on his grounds, because somewhere the wood was used for fuel or timber. This is simply

a specimen of "smart writing" and nothing more. However, with "ideas like these holding sway," "it is small wonder that in our parks and private grounds more foreign trees than natives are to be found." Have these "foreign trees" no use as fire-wood or for timber, that they have been so extensively planted?

But, not presuming to deny what may be in "Central Park," we are free to say that if any portion of this continent may be considered "America" beyond its limits, the vast majority of trees planted the past twenty-five years in our ornamental grounds have been American trees,—not particularly because they are prettier or better adapted to our soil and climate, but because we are a practical people, bent on proving all things and holding to that which is good, no matter where its birthplace may have been.

The clause our correspondent refers to reads: "As a rule it will be found in landscape planting that American trees are best adapted to American skies, just as truly as in economic planting American trees are best suited to American soil and climate."

No one but a "smart writer" would suppose "adaptation to American skies" was the chief effort of a landscape planter. We are told that "native trees compose better than when mingled with foreign forms;" that "our trees have no superiors in grace, dignity, and nobility of expression," and similar "highly written" trash. The suggestion that the State colleges should plant an arboretum, where only the trees of the State should be grown, "and not another one," is very original, truly.

It will, perhaps, not be considered wholly waste of room to note this curious article; for it will be a good lesson to look to the technical magazines, and not the "brilliant writing" of a daily paper, for the information needed to make the arts and sciences flourish.]

DOUGLAS' RAILROAD PLANTINGS AT FARLINGTON, KANSAS.—The *Prairie Farmer* gives an interesting account of a visit to these forests, which occupy 520 acres. Five miles from this is the forest planted by Douglas for Mr. Hunnewell, of Boston, who was formerly one of the managers of the railroad company. The trees were set 4 feet apart, like as in corn hills, 2,720 trees to the acre. They were set in 1877-8. There are now about 2,500 living trees to the acre. Catalpa and Ailanthus are the kinds. The cost of attention to bringing a young tree to 4 feet high, is 2 cents. They

are kept clean like corn till large enough to smother their own weeds. One man can work from four to seven acres a day. In three years the trees can take care of themselves. Four feet apart is of course too close for permanent timber, but thick planting is preferable because it makes straight trunks, and it is believed that the struggle for life will kill off the weakest as fast as it is desirable that the stronger trees should get more room. Some trees are already getting an advantage over the others. A thousand or twelve hundred trees to the acre will probably be the ultimate timber product. Eight-year-old Catalpas are now 20 to 25 feet high and from 4 to 6 inches in diameter. Some White ash are smaller than the Ailanthus or Catalpa. A small planting of Osage orange is also making "a fair slow growth," but the tangle of dead limbs from close planting would probably make them dangerous spreaders of a grand blaze in case of fire.

FOREST FIRES.—A daily paper remarks:

"Great forest fires are reported from various parts of the country, and in every case it is stated that nothing can save the woods except soaking rain storms. New York is trying both prevention and cure by the organization of a body of forest wardens, but time has not yet shown whether they can be made effective. It is certainly time that something more likely to come than rain in a dry season should be found for the suppression of these widely destructive fires that deplete American forests."

In a large number of cases forest fires come from locomotive sparks flying from the engine as it drives through the forest. How much more sensible would it be to employ laborers to clear away the forests a few hundred feet on each side of the track than to employ "wardens" at large salaries to loaf around and watch for those who "start fires." Or, where the woods are in no danger from locomotives, why not employ laborers to clear out dangerous underbrush and dead trees that start fires, instead of lazy "wardens," to hunt up offenders against the laws. For our part, we would sooner trust to a rain to put out a forest fire when it once starts among dead brush, than to a thousand high-salaried forest wardens.

Remove the dangerous material, and the danger ceases. This is our forestry platform.

THE ROSEWOOD.—The leading tree that yields rosewood has been supposed to be *Jacaranda mimosæfolia*. The proceedings of the Botanical Society of Edinburg give the following as the latest information in regard to it:

"Brazilian Rosewood, which is the Rosewood *par excellence*, has been used in Europe for fur-

niture purposes, for at least 200 years, and if the dates on some articles of this material, shown at South Kensington, be correct, for nearly 300 years. Tables and cabinets were made of it long before Mahogany was brought across the Atlantic. According to a Brazilian official publication Rosewood trees are abundant in all the provinces on the east side of the empire, from Pernambuco to Rio de Janeiro. The exports of this wood from Brazil have increased tenfold, within the last fifty or sixty years, and now amount in value to about £100,000 per annum. Notwithstanding its importance, and the length of time it has been used in Europe, the species of tree which yields it is not yet known. In Brazil it is called Jacaranda-wood; but in that country, there are several Jacarandas—the black, the purple, the violet, the white, and the thorny Jacarandas, the species of which are known, besides the rose Jacaranda, of which apparently only the genus is known. At all events, the botanical source of Brazilian Rosewood is not known in Europe. According to the catalogue of the Kew Museum, it is supposed to be obtained from one or more species of Dalbergia. In East India there are three dark heavy woods belonging to this genus, well-known for their useful properties, which somewhat resemble, though they have not the beauty of Brazilian Rosewood. These are the *Dalbergia latifolia*, the *D. sissoo*, and the *D. cultrata*. Indeed, the *D. latifolia* has been long well-known in England as East India Rosewood.

“Rosewood being known to be distinctly resinous—a property which is well seen by lighting a splinter of it—a number of experiments were made to determine the amount and character of the resins and resinous coloring matters which Brazilian and Honduras Rosewood, as well as two species (*Dalbergia latifolia* and *D. sissoo*) of the Indian

woods referred to, contained. The results of these experiments, which consisted in treating the sawdust of the different samples with naphtha, ether, and alcohol, showed that the character of the resinous matters extracted from these woods is nearly the same in all, and that there is no great difference in their quantity. For example, the naphtha extract was in most cases, about $1\frac{1}{2}$ per cent of the wood, the ether extract averaged nearly 4, and the spirit extract roundly 14 per cent. The total extract was rather higher in the Brazilian than in the East Indian woods. The naphtha extract has the characters of ordinary Pine resin—viz., ready solubility in spirit, and the highly characteristic odor when heated. Both the ether and the alcohol extracts are very dark colored, and the latter especially has a very strong tinctorial power, one part in 100,000 of alcohol showing a distinct color in a test tube.

“The results of similar experiments with a few other woods were given. A specimen of ebony, curiously enough, scarcely colored the ether or the alcohol, but its naphtha extract was considerable. Spanish Mahogany gave extracts not far short in quantity to some of the Rosewoods, but there is difference in the characters of the former, most marked in their comparatively feeble tinctorial power. The other woods tried gave results entirely different from those obtained from the Mahogany, and still more with those got from the Rosewood experiments.”

BLUE GUM IN CALIFORNIA.—One of the earliest planted in the State was cut down at Santa Rosa this summer, because it insisted on pushing a house aside. It was 105 feet high, but exact age not stated.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

NATIVE LOCALITY FOR ROBINIA VISCOSA.

BY H. W. RAVENEL.

In August number of GARDENERS' MONTHLY, p. 228, in speaking of the “Clammy Locust,” (*Robinia viscosa*) you say, “It is remarkable that this species, discovered by Michaux in the Carolinas, has never been found wild since his time, and the species is now only known by garden specimens.”

This is an error. If you will refer to Vol. IX. of the Tenth Census Reports, (1880) “Forest trees

of North America,” by Prof. C. S. Sargent, (p. 56) you will see his remarks under description of that species, that it is—“very rare, and not re-discovered until 1882, by the numerous botanists who have visited, during the last thirty years, the localities where the Michauxs, father and son, discovered the species.” He gives as the locality; “Open woods, slopes of Buzzard Ridge, altitude 4,500 feet, near Highland, Macon County, N. C. I. Donnell Smith.”

I will state also, that I have in my herbarium, flowering specimens collected by Prof. L. R. Gibbs, of Charleston, in 1881, in the very same locality as cited above. Dr. Gibbs also sent me

mature seeds, but they failed to germinate. I have also in my herbarium, a specimen (without fruit or flowers) sent me by Dr. Chapman as having been collected "by I. Donnell Smith, in the mountains of North Carolina," probably the same locality.

Aiken, S. C., August 2d.

LEUCOPHYLLUM TEXANUM.

BY GILBERT ONDERDONK.

It is a wonder to me, why some horticulturist has not preceded me in introducing this very desirable shrub to the general public. My attention was first drawn to it, in its native haunts on the Neuces river, in Southwest Texas.

A broad-leaved evergreen shrub, never attaining a height of over 6 feet, with leaves even more silvered than the Deodar, with such a profusion of purple flowers at short intervals, during the entire growing season. I know of no shrub more capable of bright effects in ornamental grounds. Like privet, box, or pittosporum, it can be sheared to any desired form and compactness. Also, I find that its blooming qualities are not at all impaired by severe shearing. Whether sheared to a globular, pyramidal, conical, or any other form suggested by the fancy, the contrast afforded by this *Leucophyllum* with the various shades of green, imparts an element of beauty to a landscape, that is but feebly imitated by any other shrub in use. It would make a fine border to a carriage drive.

As in its native habitat it is found only upon soil so calcareous as to be quite barren, it has been naturally presumed that it would not flourish in the better soils sought by the horticulturists. But experience proves that it will succeed in any good soil that has proper drainage. I have it in a rich sandy loam, where it outgrows any specimen that I ever saw in its native home. In fact, soil and culture seem to help it as much as they do any other plant.

I find no difficulty about transplanting it. I have not done with my experiments in its propagation. I get my supply from the natural thickets, about eighty or ninety miles below us in southwestern Texas.

I do not know how far north it would prove hardy. Perhaps the Editor of the MONTHLY can tell us. I should not be surprised to learn that it would be successful as far north as Philadelphia. I have never seen even the tenderest terminals injured by the coldest snaps to which we are subject in Southern Texas.

The leaves are valued by our Mexican neigh-

bors as a medicine, on account of their marked effect upon the respiratory organs.

Nursery, Victoria Co., Texas.

[The Mexican name of this plant, Mr. O. informs us, is pronounced "Sanesa." This signifies "the tree that is of the color of ashes," that is to say, silvery gray. The botanical name has the same meaning, and is from the color of the leaves. This name will be considered a hard name, and only for the fact that the people who give common names to plants, have not the slightest respect for the writer who trespasses on their prerogative, it might be suggested that "Silver bush" would be a good common name for it. "Silver tree" will not do, as that is already appropriated by an African tree, *Leucadendron argenteum*.

The plant belongs to the natural order Scrophulariaceæ, and to a section that seems to have its central home in the islands of the South Pacific, from whence the shrubby *Veronicas* come. They will hardly thrive so far north as Philadelphia, though we know of no actual experiment having been made. But there is no reason why Southern gardens should not be ornamented by this beautiful shrub.—Ed. G. M.]

"DESIRABLE NATIVE SHRUBS OF SOUTH CAROLINA."

BY MRS. J. S. R. THOMSON.

I have thought that an article upon some few of our most desirable native shrubs might prove interesting to some readers of GARDENERS' MONTHLY.

Our whole State has, according to Mr. H. W. Ravenel, Aiken, S. C., of flowering plants: Exogens, 1,310; Endogens, 500; total, 1,810. Of this list I am familiar with many, whilst others, I grieve to say, are totally unknown to me.

Of all our beautiful varieties, I would select, first, our mountain Azaleas. For years the region of their growth in the chains of the Blue Ridge, was almost unexplored ground to many; but of late years the railroads have penetrated their almost interminable fastnesses; winding through deep gorges, over wide chasms, unveiling to the entranced gaze of all beholders, these wondrous floral riches; hills clothed in vernal green and bewildering forms of beauty on every side. Ferns in limitless profusion, vines climbing to the tops of highest trees, orchids and shrubs; which distracts the mind—desire is so strong to obtain some of all. These, if known to the cultivator, I

know not, but unhesitatingly say they are well worthy a place amongst the finest collections.

Foremost among these in beauty are the Azaleas, four to six varieties; but one that I will describe in the words of others, my pen being incompetent to the task. This is a *Calendulacea* of Michaux, which Bartram in his travels calls *Fiery Azalea*, and herewith read his glowing description: "This epithet '*Fiery*' I annex to this most celebrated species of *Azalea*, as being expressive of the appearance of its flowers, which are in general color of the finest red lead, orange, or bright gold, as well as yellow and cream color. These various splendid colors are not only in separate plants, but frequently all varieties and shades are seen in separate branches on same plant. The clusters of blossoms cover the shrubs in such incredible profusion on the hill sides that, suddenly opening to our view from out of dark shades, we are almost alarmed with apprehension of the woods being set on fire. This is certainly the most gay and brilliant flowering shrub yet known." (From Rev. M. A. Curtis, Wilmington, N. C., "*Woody Plants*.") But I beg to add this to the above so faithful description. The flowers are individually about $1\frac{1}{4}$ inches in diameter, 1 inch tube, crowded upon the stem so thickly as to conceal almost the abundant foliage, forming entire clusters, often 8 inches diameter, never less than 3 inches. Imagine if you can, steeples crowned with dense masses of this and other varieties, from 18 inches to 6 and 8 feet high, as far as the eye can reach, mingled with hemlock spruce, rhododendrons, ferns, laurel and other of nature's darlings; 'tis a true picture, not overdrawn.

Side by side mingled in beautiful confusion grows the *Sweet calycanthus* or *Carolina spice bush*—whose chocolate colored, tasseled-shaped fragrant flowers fill the air with an indescribable odor, filling the senses to repletion with a delicious languor. *Chionanthus* or *Silver Fringe tree* (or *Old Man's Beard*) has pure white, long, pendant fringe-like flowers, the fringe-like petals often forming clusters from 6 to 12 inches long, furnished with pale glaucous green, ovate leaves, pale silvery stems. A few miles further south, you find the *Gelsemium sempervirens* or *Carolina yellow Jasmines* (so often confounded with *Jasminum nudiflorum* and other hot-house varieties), an evergreen vine, not belonging to what I commenced to describe—the shrubs; but so altogether lovely and desirable, and as yet it seems so little known that I add it here. This vine, I see by *GARDENERS' MONTHLY*, and in *Catalogue of Mr.*

Thos. Meehan, has been found hardy as far north as Philadelphia, is an evergreen with sub-acute satiny dark green leaves, ebony tinged stems, which in late fall forms its next season's flower-buds, remaining all winter unhurt; which as soon as our generally genial February suns begin to warm mother earth, develop into lovely long, graceful branches of golden trumpet, deliciously fragrant flowers, which are in shape identical with *Weigelia rosea*, only smaller. Often you cull a cluster 12 inches long. To describe this, my best and prime favorite, as it deserves is beyond my skill. It grows in greatest profusion; every branchlet that touches the damp, rich sandy soil beneath it takes root; clambers up and over every twig and shoot; from thence to tops of the trees, and has the real jasmine odor. It has also medicinal virtues which, in hands of ignorant practitioners have time and again caused death. "*Halesia tetraptera*, or *Snowdrop tree*," is also worth cultivation; flowers pure white, pendulous, blooms before the foliage appears, in size and shape of our *Snowdrop*—*Galanthus*.

In my rambles this spring I found a new shrub, which awakened purest admiration. Stress of duties prevented me from sending it to our kind Editor for name. It was on the edge of a brawling brooklet, amid dense shade, with ferns as a carpet, about 6 to 10 feet high, foliage almost identical with our huckleberry, but larger somewhat. But the attraction to me was its myriads of pure pearl-white, star-shaped, pendulous flowers and fragrant, about three quarters of an inch diameter. Not one flower was erect. But standing beneath this shrub and looking upward, it was like the stars of heaven, "which no man can number." The growth somewhat scrubby—looks like a slim growth would be its habit. It was new to me, and name is earnestly desired. Living, as I do, amongst so much beauty, I am ashamed that so long I have gone forth as one blind, and densely ignorant of names and habits of our native plants, but now I am an eager student, and hope to know more of my own desirable plants.

Spartanburg, S. C.

DURATION OF INDIVIDUAL PLANTS.

BY JEAN SISLEY.

A very serious question has been agitated since a great many years: that of the extinction of varieties by time. About twenty years ago, it was discussed in our horticultural papers, and then the great majority was in favor of the belief that

all varieties would be rendered perpetual by grafting, or any other mode of propagation.

I have always been of opinion, that all living beings have received from nature a certain longevity, and must, at its expiration, cease to exist. But I am not quite convinced, that that limit cannot be extended by grafting, or any other mode of multiplication. It was discussed Sunday last, at my table, by four eminent horticulturists. They are all of opinion that the extinction must take place some day or other, but they are divided as to the possibility of prolonging the existence of plants by artificial means.

As it is a very important question, particularly for fruit trees, I call your attention, and that of your readers, to the subject, and should like to see it discussed seriously to obtain a conclusion. I am of opinion, that if fruits were not renewed by sowing, we should, after a while, be deprived of those we now possess; and that, if since the beginning of this century, some people had not addicted themselves to sowing, we should not possess the excellent varieties of apples and pears now existing.

If the question is settled about the extinction by time, it is necessary to encourage sowing by selection. I suppose that no one knows the medium existence (life-time) of fruit trees, and I suppose that it has not been studied. We know, and everyone knows, the duration of annuals and bi-annuals; but no one, I suppose, that of the so-called perennials. Can it be done? If so, I think that the study ought to be undertaken as soon as possible.

Notwithstanding what precedes, I am of opinion that grafting has been a splendid discovery, and must be largely practiced; and also that the influence of the stock on the graft, must be carefully studied and not neglected, because till now a great many propagators have overlooked it, and have sown the seed for stocks at random, without attention to the natural and universal law of variability.

Monplaisir, Lyons, France, July 8th, 1886.

[When our correspondent states that "no one has been able to fix the medium of existence or life-time of a fruit tree," he hits on the real essence of the question. Unless we settle this question at the beginning, the discussion may never end.

The advocates of limit say, that a tree cannot live beyond the life-time fixed by nature; and hence grafts or cuttings taken from trees that have passed this life-time, will give only diseased trees, which will soon die.

If the advocates of persistency point to a Red Dutch currant that has been reproduced by cuttings for centuries, or the Bergamotte d'automne, or some other old pear that has been grafted for hundreds of years, still as healthy and as sound as ever; or Jerusalem artichokes or sweet potatoes, that year in and year out have been propagated by sets, without once getting a renovation from seed, and still going on as if they would do it forever, the limitationists simply shrug the shoulder and say: "Oh, yes! they have probably not reached the life-term allotted to them."

There is therefore no use in arguing till we decide what is "the life term?" So far as we know, there is no such thing so far as plants are concerned.

If we are to take the question in a general way, as put here, "Is it possible to prolong the existence of plants by artificial means," as involving the whole question in dispute, every-day experience in gardening shows we can. There is nothing more perfectly an annual than the sun-flower, *Helianthus annuus*. A year is its "natural life." But the writer of this well remembers that when a boy, his father delighting in a very dwarf and very double sunflower, and wishing to keep just that kind, kept it for years by cuttings; and we have no hesitation in saying that any one may keep a plant of an annual sunflower going on in this way for his whole lifetime, and his grandchildren or great-grandchildren may continue from where he ceased. Florists continually propagate annuals from cuttings, and keep the variety for years without limit in that way.

We do not wish to cut off the discussion invited by our friend. We would rather welcome it, but as "our attention," as well as that of our readers, is called to the subject, we unhesitatingly record our sentiments as wholly against the limitationists, though perfectly willing to be converted should good evidence be adduced.—Ed. G. M.]

EDITORIAL NOTES.

MIGRATIONS OF PLANTS.—Plants, like human beings, are continually extending the area of settlements, and forms new to old localities are continually appearing. Thus the local botanist never feels that he has found all that is to be seen, but goes over ground, looking anxiously for something, that he has often thoroughly explored. Just now the botanists of Bucks County and Philadelphia are rejoicing at the discovery in their

limits of *Archangelica atropurpurea*, *Asclepias obtusifolia*, and *Poa sylvestris*. There is a large number of good local botanists in this region, of whom Dr. I. S. Moyer has a wide reputation.

THE VANILLA BEAN.—This is the fruit of an orchid, and is used to flavor ice cream. There have been rather numerous cases of poisoning from ice cream at picnics lately; and it is believed in some high medical journals that the Vanilla bean is sometimes poisonous. It is much more likely that some one is imitating vanilla, and have poisonous ingredients used in the manufacture; for it is only when large quantities of ice cream are furnished "cheap" that the poisoning occurs.

SCRAPS AND QUERIES.

BOTANICAL NAMES AND COMMON NAMES.—A correspondent sends us a plant which he says is the Gopher root, and asks for its botanical name. We wrote that Michaux had named it *Chrysobalanus oblongifolius*. In return, the following bomb has exploded in our "sanctum":

"Your kind favor of 10th came while I had some 'gentlemen from Africa' engaged in removing some *Chrysobalanus oblongifolius* from a piece of ground, for an extension of my lawn. If one of them could pronounce that name, I am sure he would be as much of a hero among his fellows, as the Montana cow-boy who discovers a new and particularly startling species of profanity. Yes, that name is very good indeed. Michaux did nobly for a man who was not aware of the subterranean and agricultural cussedness of the plant. The name is long enough and scientific enough to answer the ends of science in this, that it can never be used and so profaned by contact with vulgar tongues, and mankind (of course, scientists are not included in that mob), will continue to say 'Gopher root' in one locality, and some other root in some other locality, till the end of time or of unmanageable scientific names. Of course, we can all see that there is some confusion among common names of plants, that it is desirable to remedy. How? Supposing when the American Pomological Society was organized thirty years ago, it had attempted to clear up the confusion in the nomenclature of our fruits by rejecting all common names, and substituting scientific Latin, or Greek, or Sanscrit jawbreakers, how much would they have accomplished?

"Just about as much as scientific botanists have in all time. They would have had a lot of very

select names that would be understood by a little self-admiring circle of 'holier than thou' scientists, while mankind would continue to buy and sell, and grow and eat fruit, under the same old confusion of names. A fruit or flower can never become popular, that the people cannot pronounce. Many of our best fruits are crushed by the incubus of an unpronounceable name. When Col. Wilder introduced *Beurre d'Anjou*, if he had named it the Wilder, or Marshall, or any easily spoken name in the language of the country, I have no doubt it would to day be much more widely planted. I firmly believe that to-day there is not one person in a thousand, in the United States, who could call for one of them at a fruit store, or read aloud its name in a premium list. Duchesse d'Angouleme went "lame" till it sloughed off all of its name but *Duchess*, which we can pronounce. Millions can call for it now, who would have to go hungry if compelled to ask for it by the full name. So botany can never be popularized in a foreign language.

"Why should a botany for the use of English-speaking people say *Ulmus* instead of Elm? Why say *Angustifolia* instead of narrow-leaved? Why say *hirsute* instead of hairy? Why *Quercus* instead of oak? Such things work mischief in frightening beginners at the threshold of their studies. To see and hear beginners stumbling and floundering among such a jargon of sounds, is legitimate fun for their associates, and their discomfort deters the great majority from ever exposing themselves to be ridiculed by their companions. Supposing a little class does persevere and conquer the monstrous difficulties of botanic nomenclature, and gain a fair knowledge of plants. When the members of that class go out into the world, and mix and associate with mankind, they must leave behind them all those painfully-acquired names, and talk English, or justly expose themselves to be ridiculed as pedants for intruding their wisdom on associates, who cannot comprehend a word they say. It is a shame, that nearly the whole human race should be shut out from an intelligent study of nature, to tickle the vanity of a few so-called scientific donkeys. I am now saying nothing against science. I am a strong believer in the value of science. I believe in English science for English-speaking people. Here is a sample of the abominable foolishness of using foreign terms in English literature. I clip from an agricultural journal that pretends to be giving instruction to its readers about applying guano to orange trees:

"In general, a bag containing from 60 to 70 kilograms, is used per fanega; but there are some cultivators who use double this quantity. The number of trees planted per hanegada varying so much, some growers have adopted the rule of putting about $4\frac{1}{2}$ kilograms to each tree; thus the manure of each costs about 5 or 6 reals."

"Now that is what I call 'clear, lucid and ambiguous.' I suppose that this matter is of so much importance, that (like botanical names) it would not do to put in language that could be understood. Doubtless, these scientists think we judge their learning as the old Scotch woman did her new preacher. Being asked what she thought of the sermon, she said: "A wonderfully learned man—a most powerful discourse. I couldn't understand a word he used."

"I don't know as I will ever see the day, but I have faith that at some time a botanist will appear, who, in addition to botanical knowledge, will have enough common sense to put his knowledge into a shape so all of us who love trees, plants and flowers, can drink our fill of the fount. God speed the day!"

And now "we rise to remark" that no one appreciates the desires of our correspondent more than these same "botanists and scientists." Numbers of them—among them Professor Asa Gray—have tried to send forth an English name along with the scientific name, only to find that they do not "take,"—the people themselves insisting on giving an English or common name—yes, a dozen or more of them—to the same plant. When a name does become common the man of science uses it, and is glad to use it. Addressing the masses:

he would never say *Quercus* or *Ulmus*, but Oak and Elm. And if "Butter and Eggs," "Fried Potatoes," or any other familiar phrase should really become common as a name for *Narcissus*, he would use it just as blandly in common conversation as our friend will say "Gopher root." Indeed, now that he has been laid under obligations by knowing that "Gopher root" is a common name for "*Chrysobalanus oblongifolius*," it is not likely the latter will be used except in cases where "Gopher root" will not be as well understood. And we can all appreciate the point about the commercial value of a short name. Possibly the accident which changed the Pear, William's Bon Chretien into the Bartlett, has much to do with the popularity of that variety.

But it all comes down to "What are we going to do about it?" Linnæus, who named the plant "*Chrysobalanus*," was a Swede, and was under no obligation to give the plant an English name. He might have called it the "Ginger-bread plant," "Wilkinson's Glory tree," or "Love in the Everglades,"—but the Swedes would have "set up" about this; for to them, "Wilkinson's Glory," "Ginger-bread," or "Love in the Everglades," would have been as much or more "hårsh, unpronounceable, and pedantic" than even *Chrysobalanus*.

Some day, when the English language becomes the universal language of the earth, there will be no difficulty about it. If the task is easy before that time, there are hundreds of scientists who would rejoice to know of it as cordially as our correspondent and the Editor.

LITERATURE. TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

FREAKS OF TASTE.

BY N. ROBERTSON.

It is interesting to watch the fluctuations in tastes and diversity of opinions as they go and come in connection with flowers. So changeable are we that at one time we are found admiring a plant, and soon after passing it as unworthy of note.

I have just been reading an article on the single dahlia, in which the author says the dahlia was accommodating in the hands of ambitious florists. It doubled and doubled until it became as full, formal, stiff, and gigantic as possible. But later on a change occurred in popular taste. Double flowers palled, and the more simple forms of them were sought out. Fashion, very sensible for once, declared in favor of the single daisies, asters, and dogwood, and he might have added single dah-

lias. Reforms were taken up in all directions, and so he goes on. Now, the question is, are those reforms wise or desirable to the extent suggested? Should we cast away our old familiar and favorite flowers that have been held in high esteem for many years in the past? I am sure they will be regarded for many years to come.

But my intention is not to find fault with plaudits of any flower; merely to call attention to the curious freaks that human tastes are subject to. They turn and return to the same thing. A plant at one time in the highest estimation, lost, revived again with renewed honors a few years later.

To produce a double flower in any class has always been the height of a gardener's ambition. And double flowers have been appreciated by the whole community. A double flower always took precedence. There is no doubt this is an extreme view. There are many single flowers which, for distinctness of color and exquisite lines, will always be held in admiration. But in general, double flowers, I think, will always have the preference. Double flowers are extra efforts of nature, and we may admire them just in the same ratio that we admire an elaborate piece of mechanical work from the hand of man. The fact is that the simplicity of the design enables many to trace and grasp wherein the beauty lies, —whereas in the double forms the work is more intricate, and requires a higher education to be able to balance and distinguish the details of the subject.

Single dahlias, I admit, are very beautiful in their chaste lines and colors; but when we look into the double forms and note the more extensive formation with the same distinctness,—their petals so regularly set,—we must allow them the preference. It may be (as it is) called stiffness by some, but I fail to see it in that light. For many years past the perfect formation of a flower has been the great criterion by which judgment has been given of their merits; and I am sure will hold its own for many a day to come.

I do not wish to be thought as condemning single flowers; but I do so when it is with the intention of degrading other old favorites, such as the double dahlia. I only wish to show where such notions will carry us, not only in this but in many things. How often do we see plants discarded for years, even lost, and yet reappear in popular appreciation, as if they had never been abandoned. Is fickleness a law of nature? For the advancement of the profession it is perhaps well it should be so to some extent. There is an old saying

and often true, that changes are lightsome and fools are fond of them; but I would say it in another form for this subject, changes are lightsome, and we all should be fond of them when they do not detract from the merits of old floral friends. Give us the single dahlia, I say, or any other single flower. It need not interfere with our love for the double ones.

Freaks of fancy are all the more curious because they have generally tended to detract from their parent forms. At the present day single roses are the applauded; but who would dare to place them on the same level or as superior to the double? No one will try this, I am sure.

There are many freaks of fancy just as curious in regard to other matters in connection with plants as this. When a new plant is first introduced with the slightest deviation from its parent, it receives signal praise over its predecessor, because it is slightly different, though without any mark of superiority, just because it can be called a new one, and for a time may carry one away by mere novelty. But eventually novelty palls. We appear to hold, as the Scotchman does, that all new things are bonnie (pretty). This is not always true when compared justly with the older ones. The aspiration to acquire new things is perhaps one of the best traits any one can have. I love it because the effort gives you personal insight into the merits of the novelty and enables you to judge for yourself, and satisfies a craving to see that which we have heard of. I have no blame to attach to parties recommending novelties. In many instances they may see beauty in their productions which we cannot. It is thus in every line we follow, and so we must put up with it, I suppose, to the end.

Government Grounds, Canada.

EDITORIAL NOTES.

A CENTURY PLANT IN PHILADELPHIA.—One of the century plants, *Agave Sisalana*, was brought from Mexico by Rev. Dr. McCook, the famous investigator into the habits of ants. It was placed in a half barrel, and has now started to bloom. Those who delight in these rare curiosities, may see it all the autumn at the Academy of Natural Sciences, Nineteenth and Race Streets, Philadelphia. The common century plant is blooming in other places.

TELEGRAPH PLANT: DESMODIUM GYRANS.—The sensitiveness to touch of the well-known Sensitive Plant (*Mimosa pudica*) and *Dionæa* is singular enough, but the movements of the leaves of this *Desmodium* seem still more curious, and up to the present have baffled our best observers. The movement may be observed on a light warm day, when the plant is standing in a temperature of about 80°. The two small lateral leaflets may then be observed to move upwards, and downwards; first the one and then the other, now resting a moment, then starting again with a jerk. The movement is quite spontaneous, the plant not being perceptibly sensitive to the touch. Truly it is a vegetable wonder, and deserves a place in every warm greenhouse on that account. It is easily propagated either by means of seeds or cuttings. It is a rapid grower, and, though it is not handsome, still it is a graceful plant. It grows to a height of about 2 ft. Any light soil will suit it, and the higher the temperature in which it stands the more perceptible are its movements. I do not think it would thrive in winter in a temperature lower than 55°. It is a native of India, and is a member of the Pea family.—*Gardening Illustrated*.

THE HEALTH OF GARDENERS.—At a recent conference held at the Health Exhibition, it appeared from some statistics collected by Dr. Ord, that gardeners had a better chance of life than any other class, out of some eighty specified classes of workers, with the exception of clergymen. If 1,000 be taken as the average standard number of deaths within a given period, among all classes taken together, then the number of gardeners who die during the period is barely more than half the average, *i. e.*, 559; that of clergymen, who have the best chance of all, 556; agricultural laborers, 653; farmers, 675; medical men, 1,125. The highest death rate is among persons engaged in hotels, 2205; innkeepers, 1521; brewers, 1361—significant figures these! The proportion of medical men who die in a given time, though above the general average, is less than might have been expected from the harassing life they mostly lead, and the special risks they run.—*Gardeners' Chronicle*.

ITALIAN NAME FOR TOMATO.—The Italians call the tomato, "Pomodoro." Long, pear-shaped varieties seem to tickle their fancy most.

INTRODUCTION OF DAHLIA AND CAMELLIA.—The dahlia was introduced to Europe from Mexico in 1800. The camellia from Japan in 1739.

KILLED BY A BEE.—An inquest was held at Torworth, near Retford, on the body of a farmer named Newcome. It was shown that the deceased in his garden was stung on the forehead by a bee, and that he died almost immediately from the effects of the injury. Verdict accordingly.—*Gardeners' Magazine*.

NICE, THE FLOWER GARDEN OF FRANCE.—Nice is regarded as the flower centre of France, and the prices that prevail there govern the floral commerce of the whole country. In March last they got 16 cents a dozen for Safrano roses, 25 cents for Lamarque, 20 cents for Dijon, 50 cents for Marechal Niel, Carnations, 15 cents a dozen, Camellias, 40 cents. These seem to be their leading flowers though Violets, Mignonette, Golden Asters, and Yellow Acacias, are among the quotations.

LADIES AS MEMBERS IN SCIENTIFIC BODIES.—Noticing the refusal of an eminent scientific body to receive a lady to membership, and the action of the Philadelphia Academy of Natural Sciences in receiving them to full membership, a Cincinnati correspondent says that the Society of Natural History of that city, founded on the plan of the Philadelphia academy, not only has a very large list of lady members, but some of them have reached such scientific eminence as to become officers in the body. The head of the department of Botany is Miss Nettie Fillmore, and Mrs. M. C. Morehead, of Conchology, and Mrs. Jos. L. James is the Secretary of the Botanical Section. At least ten ladies, known to our correspondent, were elected members last year. It seems strange that the oldest scientific body on this continent should be left to learn from younger ones in a matter of this kind.

VITALITY OF SAGO PALMS.—It does not do to throw these away when they appear to be dead. The writer has known *Encephalartos* from South Africa remain without showing any signs of life for several years. Similar instances are on record. In the *Deutsche Garten Zeitung*, Dr. Wittmack gives an instance of the longevity inherent in trunks of the genus *Cycas*. He says:

"In the nursery establishment of Mr. J. C. Schmidt, at Erfurt, Germany, there have existed, for the last eight years, two trunks of *Cycas media*, having a height of 13 and 16 feet respectively. These two trunks, forming a portion of a large cargo brought from Queensland, were, on their arrival in 1878, considered to be quite dead; but, for the sake of curiosity, they were, nevertheless, planted in the ground. Imagine the astonishment of everybody concerned, at finding that these 'mummies' had suddenly returned to life,

their crowns ornamented with wreaths of thick foliage, which is now completely grown, and affords a most imposing sight!"

ENGLISH SPARROWS AND SEVENTEEN-YEAR LOCUSTS.—It is supposed that the English sparrow has learned to read, and has been perusing Prof. Riley's statements that locusts are good to eat. Not being versed in entomology, however, they mistook cicadas for locusts, and fell to work at them about London, as Prof. Ward says that they did about Washington. The cicada has thrived for centuries in spite of English sparrows, but now they are becoming educated, the locust will have to go.

NAMENLOSE SCHONE ROSE.—We have a communication from a Maryland gentleman who saw the Namenlose Schone (Nameless Beauty) rose in Mr. Deegan's establishment last year, who gives some very interesting facts in regard to its history, which we hope to find space for next month.

THE FRUIT RECORDER.—This magazine, which for eighteen years has done good service in the cause of fruit growing, has passed into the hands of the proprietors of *Popular Gardening*. It is announced that Mr. Purdy will go on the editorial staff of this excellent periodical.

THE AMERICAN FLORIST.—A note from our excellent young contemporary, the *American Florist*, some time since reminded us that credits would be more acceptable when given to the "American Florist" than to the "*Am. Florist*" or "Florist." We suggested that though we should be happy to accommodate our friends, we wondered why, in these days, they had encumbered themselves with such an unnecessarily long name. In our mind "Florist" would have been just as well, seeing there is no other magazine of that name.

We are glad to note that they are falling in with our views. In the issue of August 1st we learn that "Mr. May calls the attention of the *Florist*," that "the *Florist* does not intend," and that "the *Florist* in its seed trade department has," and so forth; all of which indicates that the long name, as originally adopted, is half repented of.

Many a magazine with a long name, if the owners had to go over the job again, would, in these days of short-loving names, crop their cognomens by one-half.

SILK CULTURE.—Under the auspices of the Women's Silk Culture Association, of Philadelphia, the culture of the mulberry and silk raising

generally, is becoming one of the great successful industries of the United States.

The United States Congress has recognized the utility of the efforts of these ladies, and has appropriated \$5,000 to enable them to purchase and distribute mulberry trees to all who apply for them, provided they will furnish satisfactory evidence that the trees will be cared for till "fruition."

The ladies have issued a circular on which we are invited to comment. We can only say that it will be of great use to those entering into silk culture, and as it is freely issued, new beginners should send for one.

We think it much better to sow seeds or plant seedlings than to raise from cuttings, as recommended; but this we comment on in another place.

THE MULBERRY SILK-WORM, WITH INSTRUCTIONS.—By C. V. Riley. Printed by the United States Department of Agriculture.

With the newly awakened interest in silk culture this work is timely and useful. What is said of raising plants from cuttings we think may stand revision in some future edition. The mulberry is subject to the attack of a species of *Botrytis*, a fungus allied to that which attacks the potato and the buttonwood tree; and from the experience of the Dr. Philip Physick's Cocoonery, at Germantown, near Philadelphia, the failure of which caused the collapse of the celebrated "*Morus Multicaulis*" boom, the disease may be communicated from the leaves to the insects which feed on them. Propagation by cuttings, and especially by layers, always has a tendency to weaken the vital powers of a plant, and when to this is added the stripping of the leaves (which have been likened to the lungs of a plant), we can see how susceptible the plant becomes to insect ravages. Indeed, the multicaulis variety was nearly swept out of existence by this disease. To our mind nothing but seedling plants should be recommended for silk-worm culture.

TRANSACTIONS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY FOR 1885.—From Robert Manning, Secretary.

Progressive horticulture owes a great deal to its Massachusetts votaries, and especially those resident in the vicinity of Boston. The interest they show in their Horticultural Society is worthy of all praise. The best citizens belong to it, and they not only encourage progress among their own members, but influence the whole public taste. An excellent thought is a standing committee on

public gardens and grounds. Their annual reports have much influence on the management of the public parks, for the excellence of which Boston is so famous.

The Arnold Arboretum is a source of pride to the whole country, and it will interest all our readers to have the report of this committee, through Mr. J. L. Barker, chairman, which we here append:

"Our next visit was on the 26th of August, to the Arnold Arboretum, first stopping at the residence of our Treasurer, by whom the Committee were hospitably entertained. After a delightful drive through the pleasant avenues of Jamaica Plain, we found ourselves at the Arboretum of Harvard College, which contains one hundred and sixty-five acres of land, quite varied in character. This is a portion of the well known Bussey Farm, in that part of Boston formerly known as West Roxbury, and is within a few minutes walk of the Forest Hills station on the Boston and Providence Railroad, making it of easy access to visitors. The location is such that the experiments here made will be of great value to New England, and of general interest to a large portion of the whole country. The Arboretum is yet in its infancy, having been commenced only in 1874, when the seeds of the first trees were planted; so that, excepting the older trees previously on the place, of which there are many, a great portion are only nursery plants, which on account of certain arrangements made with the city of Boston could not be planted in permanent positions until the laying out of some of the roadways had been completed. This being accomplished in part, the coming spring will see many of the botanical orders planted where they are to remain permanently, the planting being as far as possible in botanical sequence. Along the roadways will be planted both native species and those of foreign introduction, including all the varieties, so that even one not possessing special botanical knowledge can at a glance comprehend the arrangement and see by comparison the plants which best endure our climate. The Arboretum will thus be a living museum, where the nurseryman, gardener, and private land-owner may come for trustworthy information regarding all trees or shrubs, which will save them the cost of personal experiments, and of delays caused by unfortunate selections.

"The collection of living plants at the Arboretum is richer in species than any other in the United States; numbering at the present time over two thousand species and varieties of woody plants. Many of these may prove failures; but it is the work of the Arboretum to show by living illustrations what to select and what to avoid. The collection is being continually increased by a system of exchanges with botanic gardens and similar institutions, both public and private, in every part of the world within the temperate zone. Experiments are also being made with seeds of plants taken from widely different localities, with

the hope that additions may be made to our lists of hardy trees. This has already been done in several instances, such as *Abies concolor*, *Pseudotsuga Douglasii*, and several others; the seeds of those plants brought from the warmer parts of the Pacific coast having proved of little use to us, in our changeable climate, while seeds from plants of the same species growing in Colorado under conditions similar to those in New England have produced plants which, so far, stand our climate as well as our native trees.

"Besides planting the living specimens, there has been established a Herbarium, containing an abundance of specimens of woody plants, collected from various parts of the world, and plants of the same species from different localities, to aid students and others in determining the names of species and the effect of climate and location. There will also be a large collection of all kinds of woods, barks, cones, and other tree productions that may be of use in the arts or sciences. These collections are already very rich in American species, and require a great number of botanical cases to preserve them. They are at present stored in a house owned by Professor Sargent, kindly loaned by him for this purpose until such time as a proper building shall be erected on the Arboretum grounds.

"The sources whence seeds are received from time to time are recorded in a set of books kept for this purpose. They are numbered in regular order, and by a systematic arrangement notes are made as to their hardness, adaptability, usefulness, etc., which in future will be of great benefit in determining the history of these plants, and will form likewise a history of the Arboretum.

"The records kept at the Arboretum show that several thousand plants are annually exchanged with individuals, botanic gardens, agricultural colleges, and other institutions, not only in this country but in Europe, Asia, North Africa, St. Helena, Japan, the Sandwich Islands, and elsewhere. So wide a dissemination of plants must be productive of good results.

"The past season a Shrub Garden has been made comprising about two and one-eighth acres, laid out in beds ten feet wide by two hundred and seventy-five feet long, sufficient in extent for 1,157 species and 357 varieties. The shrubs are systematically arranged, beginning with the order Ranunculaceæ, and ending with Smilacaceæ; and not only botanically, but as far as possible, geographically, American plants coming first. Here any one with even a limited knowledge of plants can take notes of these growing specimens, which will enable him to gain more knowledge than months or even years of study from books or catalogues could give, and will help him to make such selections as he would like to plant. All this is done at the expense of the Arboretum, thus giving all who wish to avail themselves of its privileges and advantages a real school of instruction free of all cost; and this will go on from generation to generation. No other such place is known where such valuable information can be similarly

obtained; while Mr. Dawson, the skilful gardener, is always ready to impart any knowledge in his possession.

"There are spaces left open for undetermined varieties, but the garden now contains 690 species and 250 varieties, with the possibility that from four to six hundred new species or varieties will be added the coming year. This location was mowing land, and was broken up only a year ago, and it is really astonishing to note what has been accomplished in so short a time; we can look upon this branch of the Arboretum work as one of the noblest educational agencies existing in any country.

"Among the larger orders planted are fifty species of Spiræas and thirty-two varieties; thirty-four species of Clematis; twelve species of Eonymus and nine varieties; fifteen species of Rhamnus; fourteen species of Caragana and three varieties; forty-four species of Prunus and nineteen varieties; fifty-two species of Roses and eighteen varieties; nineteen species of Blackberries and twenty-four varieties; twenty-eight species of Philadelphus; twenty species of Ribes; fourteen species and seven varieties of Cornus; twenty-one species of Snowballs and three varieties; thirty-one species and eleven varieties of Honeysuckles; twelve species and three varieties of Huckleberries and Blueberries; sixteen species and five varieties of Rhododendrons; nine species and thirteen varieties of Ericas; and fourteen species and thirteen varieties of Lilacs.

"The use of the present grounds, however, is only a temporary arrangement, the future demanding a larger and more permanent place.

(To be concluded in our next.)

HOW TO HANDLE AND EDUCATE VICIOUS HORSES.—By Oscar R. Gleason.

THE PERCHERON HORSE IN AMERICA.—By M. C. Weld; IN FRANCE.—By Charles Du Hays. New York: Orange Judd Co., 1886.

These two works bring horse knowledge down to the present time. It is remarkable that though the horse has been a study for centuries, there is always something new to learn about the noble animal.

In reading these useful books, we were impressed with the thought that has often occurred to us before, how much a study of one branch of science assists another. Some years ago, when the speculations about the cross-fertilization of flowers became popular, the writer of this read a paper before the American Association at Detroit, to show that the whole speculation was founded on an assumption that was far from being proved. It was assumed that "in-and-in breeding" was an injury to plants; and then that insects, by cross-fertilization, were a material aid to them in maintaining a healthy race. Without denying what is certainly a fact, that many plants do not seed un-

less fertilized by insect agency, it was shown that the plants that relied on them had a worse chance than those that depended on in-and-in breeding; and it was also shown that even the popular belief that in-and-in breeding was an injury to animals, was a popular delusion.

In the latter of the two books named, there is a chapter on this subject, and the proof clearly given that there is no deterioration of the races—but rather, a strengthening—wholly confirming the views of plant life in the paper referred to.

MR. THOMAS BENNETT.—Mr. Bennett, whose name is connected, by Prof. Riley, at page 212, with the useful work whereby he is enabled to give the history of the new onion cut-worm, is said, in that article, to be of "Newark," New Jersey. Mr. Bennett resides at Trenton, not Newark. As the Professor uses Trenton through the rest of the paper, "Newark," in the first instance, is evidently a slip of the pen.

WILLIAM GRAY, JR.—Horticulturists all over the United States who have knowledge of the magnificent garden and grounds of Mr. Gray, near Boston, will be pained at the recent revelations and the suicide of their owner. This, the second shock of that kind within a few years, must be distressing everywhere to lovers of good gardening.

SCRAPS AND QUERIES.

HARD AND EASY NAMES.—A florist who is a German does not think the English names of plants any easier than Latin ones, and even the English names used in florists' work worry him considerably. He thinks Dutch names might be adopted with great advantage by those who think easy names a great desideratum. For instance, he thinks the common phrase, "Florists' Supplies," a terrible word for any one to pronounce, and he would substitute for this, Gartenwerkzengfabrik. While the subject of short and easy names is up, this simple word may be worth considering.

MR. WILLIAM NISBETT.—"To the Editor of the GARDENERS' MONTHLY: In the August number you have a notice of my father's death, etc. My father's name was William; you print it John. Please to notice the same, and oblige, yours respectfully, JAMES NISBETT."

PAWTUCKET, R. I., August 2, 1886.

ROSES IN EGYPT. — "B." writes: "I enclose a slip that I have just enjoyed from a very readable ladies' article on roses:

'Cleopatra, at one of her receptions to Marc Antony, caused roses to be massed on the floor of the hall to a depth of 18 inches. It was customary at great out-door festivals to float thousands of roses on the placid lakes, and to wind garlands of choicest blossoms around the trunks of trees. In great and distinct varieties roses abound everywhere, even within the polar circle a variety is found which blooms in the midst of snow and ice, and the sledges of the Esquimaux, as well as their reindeer and sealskins, are often decorated with large, double roses. All along the coast of this country indigenous roses adorn the marshes and fields; these differ in point of color and in the number of petals, but are alike in odor and general appearance, the five-petal pink rose being the most common.'

"I find no fault with the lady's article; it is what any graduate of a modern college might have written. But it reminds me of doubts I have

had in my classical readings whether the Egyptians ever grew roses at all? I cannot now recall the passages, but I am sure there are some in the ancient writings that imply that they imported their rose flowers, as our country towns now get them from the large cities. The Egyptian climate now is unfavorable to rose culture, and I fancy it must have been more so in the past.

"Again, we are finding that our translations are not always correct. It is said that rose should have often been translated 'reed,' and perhaps the ancient roses of the Egyptians were not roses as we have them to-day. My desire, however, is to suggest that if they had real roses, and imported but did not grow the flowers, their knowledge of the art of transporting cut flowers must have been great for that early time."

[We never heard of such a suggestion before, and must leave it to those better versed in the niceties of early Latin or Greek literature than we are, to reply.—Ed. G. M.]

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

THE SOCIETY OF AMERICAN FLORISTS.—This institution has reason to be proud of the commemoration in Philadelphia of its second birthday. The number of intelligent men and women who attended, representing the trade, all the way from the Rocky Mountains to the Atlantic, and from Canada to South Carolina, was phenomenal. The addresses were of a high order, and did credit to the trade. They were all of a character tending to practical value, except when they touched on moulds, funguses, blisters, rots, and such like, when it was found that the "opinions" of members had to take the place of facts, and then no one member seemed to agree with each other.

The exhibits also were made with a view to immediate practical value. Everything likely to be of practical use, from the greenhouse itself to the flower pot, or that would tend in any way to advance the art of the florist, had something to represent it and the whole exhibit was singularly instructive. And of the men and women in attend-

ance it is fair to say that it presented a more than usual amount of intelligence and culture than is seen in the average trade convention, and the impression made on the citizens of Philadelphia was exceedingly pleasant, and brought with it a greater amount of attention and respect than usual.

The horticultural press was well represented. Among others especially active were *Popular Gardening*, *Floral Cabinet*, and of course *American Florist*, which, though with no connection with the society, was yet, as a trade journal, the outgrowth of the formation of the Florists' Society.

Of the receptions of the meeting by the citizens of Philadelphia and its "Florists' Club," it does not become us, perhaps, to speak; but we believe we voice the sentiment of the whole body of visitors when we say that it was an occasion that will be long remembered by its participants.

The entertainments given by the Florists' Club, at Atlantic City, and that by Mr. Geo. W. Childs, of the *Public Ledger*, at Wootton, his country seat, seemed particularly to gratify the guests. At the latter there were one thousand one hundred pres-

ent, the greatest gathering of flower raisers and flower lovers ever perhaps gathered together in our country. Mr. Meehan was asked to welcome the guests in behalf of the generous proprietor, and Mr. Hendricks, of Albany, to respond for the florists. These impromptu addresses were regarded as singularly opportune and worthy of preservation, and if we can prevail on these gentlemen to write them out for us, we will give them in full in our next issue.

As our magazine goes to press before the convention has fairly ended, we can only at this time give this general sketch of it.

MANAGEMENT OF AMERICAN HORTICULTURAL SOCIETIES.—Much is found commendable, by English journals, in the management of American Horticultural Societies. The *Gardeners' Chronicle* says:

"The fifteenth annual report of the Michigan Horticultural Society, now before us, forms a substantial volume of over 500 pages. Its contents fitly illustrate what is being done in most States of the Union and in the Dominion of Canada, and they offer for our use, on this side of the Atlantic, an excellent model. Here if a society gets up one or two shows in the course of a year, it is thought to have accomplished its purpose. It has, perhaps, contributed successfully to the enjoyment of a large number of people, especially if, as is common in the provinces, the horticultural display be associated with fireworks, bicycle races, and other accompaniments more fitted for a country fair than for a society which is supposed to have more important aims in view. We have nothing whatever to urge against the recreation of the people—quite the contrary; only we allege that it is not the proper function of a horticultural society to provide it. A horticultural society exists for the advancement of horticulture, and it goes out of its way when it attempts to fulfill any other office. In the United States, though, we doubt not, the recreative element is not neglected, the horticultural societies mean business, and do not mix work and play, but work first and play afterwards. In the case before us, we see the Michigan State Horticultural Society has four meetings yearly, and that it has associated with it numerous local societies, which seem all to work on the same general lines."

GEORGIA STATE HORTICULTURAL SOCIETY.—The annual meeting was held at Fort Valley, in the last week of July. Mr. J. H. Parnell, the Peach King of the South, Dr. Hape, Dr. Brown, Dr. Cary, Col. Geo. W. Waring, the Bishop of Florida, Messrs. T. L. Kinsey, Samuel H. Rumph, and P. J. Berckmans, President, were among the Southern pomological celebrities in attendance. President Berckmans' annual address is to be published in full by the Society. We hear much of our insect enemies, but on this occasion, Prof. Willett, of Mercer University, discoursed on our insect friends. A strong point was made by Mr. Berckmans, that horticulturists should not be men of business merely, but should be educators in the higher branches of intelligence, if they would

have their profession stand well before the world. A watermelon on exhibition weighed 66½ pounds.

Among the pleasing incidents of a personal character, was the presentation of an immense ornamented cake to Mr. Berckmans, by the citizens of Valley Fort. Another pleasant feature was the great interest taken by all the best people of the town in the success of the Society; and a local Horticultural Society will likely be the outgrowth of the State Horticultural Society. Mrs. W. E. Brown has one of the prettiest gardens in Georgia at Fort Valley.

NEW YORK HORTICULTURAL SOCIETY.—It is proposed to hold a Chrysanthemum exhibition in November, at Cosmopolitan Hall, "of which the city of New York may well be proud." Very high premiums will be awarded, and a guarantee fund of several thousand dollars has already been raised to insure the paying of the premiums. Mr. John Thorpe is Secretary *pro tem.*, in place of Mr. Murkland, deceased.

CALIFORNIA NURSERYMEN'S ASSOCIATION.—The leading nurserymen of the State have formed an association, the objects of which shall be to promote the general interests of the members: First—In the cultivation of acquaintance. Second—In an interchange of ideas with others engaged in this avocation. Third—To aid in the protection of our patrons from fraudulent dealings, and the injurious results arising therefrom to the members of the association. Fourth—The exchange and sale of stock. President, James Shinn, of Niles; Vice-President, M. Williams, of Fresno; Secretary, R. D. Fox, of San Jose; Treasurer, John Rock, of San Jose; Executive Committee—James Shinn (ex-officio), R. Williams, of Sacramento, Gustav Eisen, of Fresno.

MISSOURI STATE HORTICULTURAL SOCIETY.—From L. A. Goodman, Secretary, Westport, Mo. This is a full report of the meetings held at Warrensburg and Butler, in 1885, and it contains a catalogue of all the wild plants of Missouri so far as yet collected, by Prof. S. M. Tracy, of Columbia College. In addition there is an excellent resume of the facts of interest to Missourians, collected from various sources by the editor.

FRENCH OPINIONS OF THE SOCIETY OF AMERICAN FLORISTS.—*Journal des Roses* has an American correspondent who speaks in the highest terms of this new body. He believes it has started out to do an excellent work. He notices particularly the efforts of the body at its meeting in 1885, to straighten out the synonyms of roses. It describes in humorous vein the many false names under which some roses are masquerading in our country, and reflects especially on one, which in France is a good young lady named Antoinette Strozio, should here in America, "attempt to personate a very respectable gentleman named E. Y. Teas, who, equally with the rose itself, is refined and elegant." Mr. Teas will surely pardon the lady, when she has been the means of securing him this handsome compliment.

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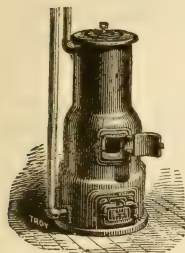
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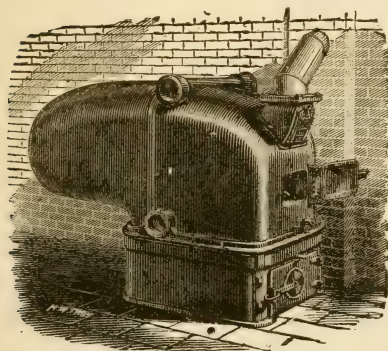
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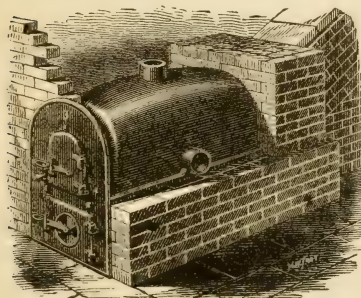
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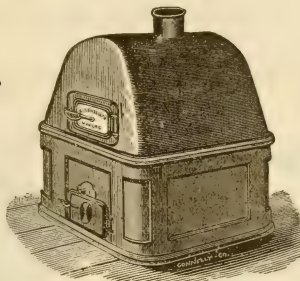
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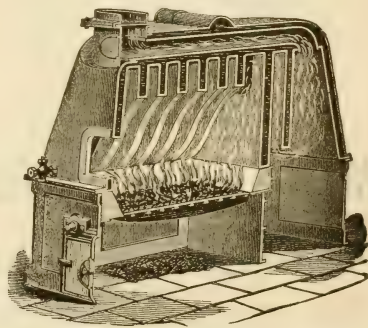
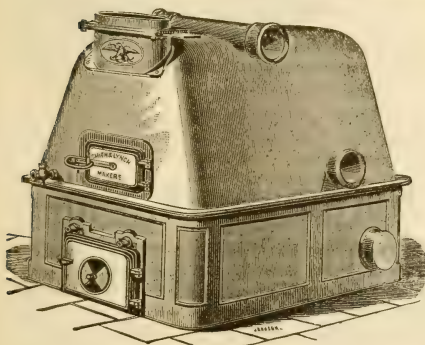


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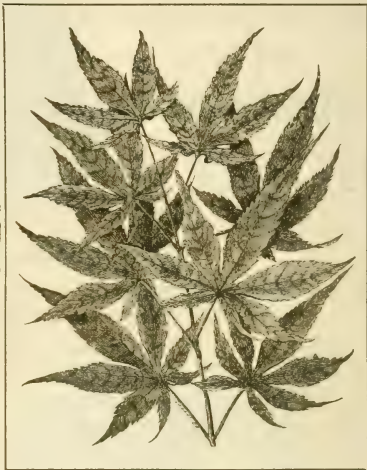
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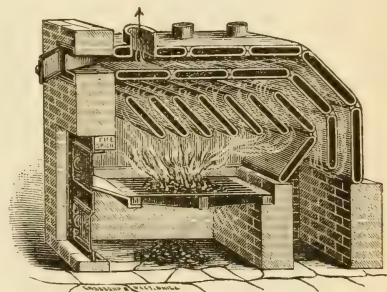
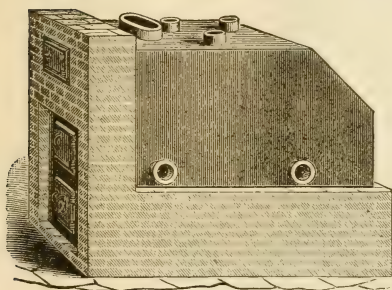
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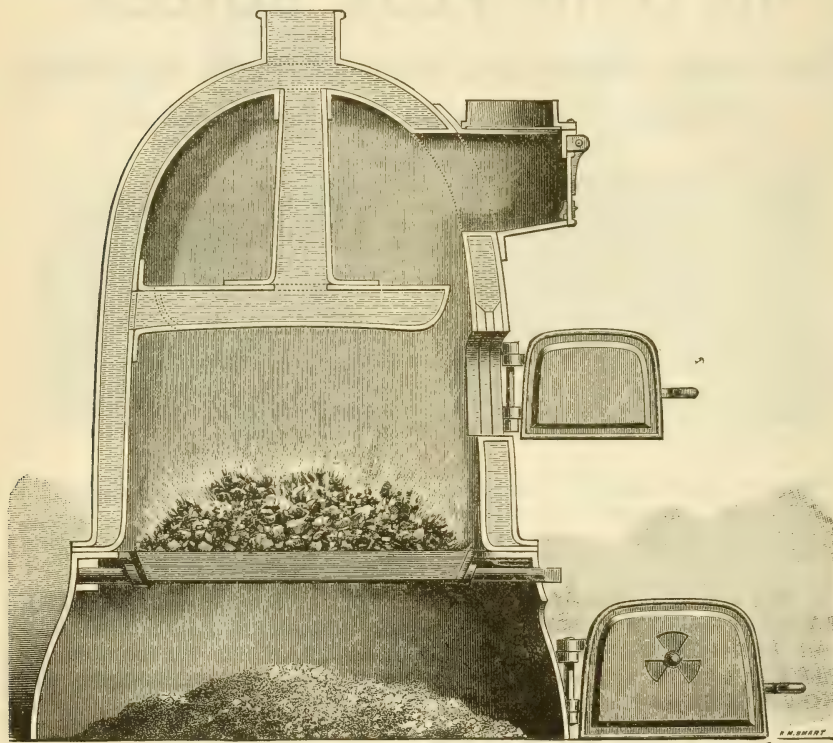
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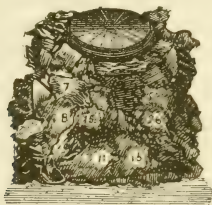
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Edited by THOMAS MEEHAN.

VOLUME XXVIII.

OCTOBER, 1886.

NUMBER 334.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

The dear old-fashioned flower garden, which consisted of little more than a two or three feet border through or around a vegetable garden, is still one of the best places to pass a pleasant hour among outdoor flowers. Here are the *Pæonias*—"pineys" our mothers called them—*Phloxes*, Sweet Williams, Hollyhocks, old hundred-leaved Roses, and everything that is the sweetest and best are gathered together. In these old gardens there were few complaints about herbaceous plants dying out. They never died. Why? Because they had plenty of food. The borders always had plenty of top dressing in the fall of the year. We have an idea that much of the difficulty found in growing lilies comes from the poverty of the soil. No better investment can be made by those who love hardy flowers than to give them a top dressing of rotten manure in the fall of the year.

Many persons use fresh manure for protecting roses and other half-hardy things. In this fresh condition it contains much salt, and many things are killed instead of being protected by it.

In like manner it is not wise to put leaves for protection thickly over plants. It holds moisture and rots instead of protects, and often breeds mildew which is as bad as cold. It is bright light to-

gether with frost that injures plants, and enough leaves to shade is all that is required. This is why evergreens, such as *Rhododendrons* and *Kalmias*, suffer in winter so much. Something to keep off the sun is as beneficial as something to keep out the frost. For this reason the ground itself is a good protector. It has long been known that raspberries, grapes, figs, and similar fruits can be taken care of by bending the branches and covering with earth. Roses and many half hardy things can be covered with earth and preserved the same way.

Seeds of herbaceous or border flowers, if sown before winter, will bloom next year; but these also should have a few leaves or other material placed over or they will be drawn out by frost.

Drawing out, however, only occurs badly in soil that retains water. It is the water in the soil that freezes, not the soil. Hence much attention is given by gardeners to draining away all standing water. This is why carriage roads and pathways through grounds require draining. In undrained roads, after frost the ice is pushed up in the form of crystals, and one walking over seems to be walking through snow. When walks are well drained the ground is nearly as hard in summer as in winter. One of the advantages of a Telford road in this country is that the water drains away better than in an ordinary

Macadam. In a Telford road large stones are set edgewise, and only a few inches of broken material are put on the surface. In a Macadam road the whole is broken stone, the larger at the bottom and in layers of smaller sizes until the whole is finished. The arrangement of carriage roads is one of the most important elements in making a successful piece of landscape gardening. There are few things more difficult in gardening than this locating of a main road, and it is just here that it requires the skill of a thorough landscape gardener. Any thick head may be able to

son river region. It is the residence of A. C. Richards, Esq., at Irvington-on-the-Hudson. The estate is known as "Ridge View."

COMMUNICATIONS.

SOME NOTES ON THE CHINA TREE.

BY MRS. JENNIE P. TOOLE.

The China tree, *Melia azedarach*, is one of our quickest growing and most valued shade trees. Shall I venture to tell you more about it than



Ridgeview, Irvington-on-Hudson. Residence of Mr. A. C. Richards.

make a well drained and good driving road. It is the direction so many fail in. Good architects also often fail to be equal to the occasion of designing a good country home. Three-story city houses are often given for country houses, just as if there were not land enough to spread out. In our notice of the residence of Mr. Geo. W. Childs, the publisher of the Philadelphia *Public Ledger*, we noted among its commendable features, that though very large, it was but two and a half stories high. Annexed we give a cut of another commendable house of this kind, from the Hud-

son river region. I say venture, because you, perhaps, know the tree as well as I do. It makes beautiful furniture, being striped a rich cream and dark brown. A friend who had a bedstead made of it, told me that bugs never came about it. Housekeepers use the ripe berries to put in sacks of dried fruit as a guard—of course, taking them out before cooking the fruit. The roots are put in the drinking water of hogs as a medicine. In the fall, when the berries first ripen, the robins get drunk on them. During the war, shoe-blackening was made from the ripe berries freed from stems;

then reduced to charcoal and crushed to a paste with water and white of an egg. The berries supplied the sugar and oil. And lastly, when we see the China trees budding, we feel sure spring-time has come, for they are a cautious family, and rarely ever let Jack Frost catch them. The tree is a favorite with Young America, as the green berries furnish just the ammunition he requires for his pop-gun. I have told you all this about one of our favorite shade trees, which does not grow so far north as this place. One variety is well-named, the Umbrella China, for its habit of growth forms a perfect umbrella.

Talladega, Ala.

NOTES ON RECENT NUMBERS.

BY WM. FALCONER.

Amelanchier Botryapium, p. 196.—In the newer parks and pretentious gardens, our leading landscape gardeners are dealing heavily in native trees and shrubs, and the amelanchiers receive due attention.

Amaryllises in the South.—I am glad Mr. Oberwetter, p. 196, calls attention to these as hardy plants in the South of Texas. Among the thriftiest amaryllises I ever saw, were growing as hardy plants in druggist George's garden in Galveston. Amaryllises are easily raised from seed, and begin to bloom when two to three years old.

Manettia cordifolia, p. 198.—Is not hardy here, I have tried it.

Lilacs, p. 199.—Let me also add *Syringa Amurensis*, white, fragrant, blooms end of June or first of July. But the gem of lilacs is *S. villosa*; I saw it in bloom at Boston last June. We have a fine specimen of *S. Japonica*, some 8 feet high, it makes a very pretty and shapely little tree.

Montbretias, p. 214.—M. Pottsi blooms sparingly with me, but grows rankly. Prof. Gibbs told me it blooms abundantly with him in his garden at Newport. *M. crocosmiæflora* blooms freely and seedlings that I raised last year have been in bloom all through this summer, planted out in the open border. I winter them in a frost-proof frame.

Litchi, p. 216.—*Nephelium Litchi* is not hardy in the Northern States.

The Climbing Hydrangea, p. 228.—I first saw this in bloom in Col. Marshall P. Wilder's garden at Dorchester, Mass., some years ago. The plant was running up the stem of a living pear tree ivy-fashion. Since then I have seen it in bloom several times. The inflorescence is not very beautiful but the large masses are very striking

and in quantity ornamental. But is not this the true Climbing Hydrangea and not the *Schizophragma hydrangeoides*? What does Mr. Thomas Hogg say? The plant is very hardy, rather slow-growing at first, and I find it must be several years old before it attempts to bloom.

Gray's Lily (*Lilium Grayi*).—You mention, p. 230: "Lilium Grayi among a very large collection in Philadelphia, seems the earliest of any to flower. It was open on the 12th of June." So far as the earliest to bloom is concerned, I have not found it so. As a rule I have found *L. Scovitzianum* to be the earliest; next *L. tenuifolium*, *L. Davuricum*, *L. croceum*, *L. Thunbergianum*, *L. Philadelphicum*, *L. parvum*, *L. Martagon*, and *L. Columbianum*. *Lilium Grayi* I have found to come into bloom about the same time as *L. pulchellum*, *L. Washingtonianum*, *L. pubescens*, *L. Hansoni* and *L. pardalinum*. But I find that lilies do not bloom year after year in the same rotation, they sometimes vary several days; thus—while *L. Scovitzianum* may be the earliest to bloom this year, *L. Davuricum* or *L. tenuifolium* may be the earliest next year, and so on throughout the season. Some varieties of *L. Thunbergianum* are much later in blooming than others.

Japan Umbrella Pine, p. 229.—Our largest plant is exactly 8 feet high, 4 feet in diameter of spread of branches and perfect from the base up.

Pterostyrax hispidum, p. 230.—Our largest plant is 8 feet high and 5 feet spread of branches. Its largest leaves are 9 by 8 inches across, and its average ones 7 by 6 inches. It bloomed this summer and now is ripening seed.

Indigoferas, p. 230.—The main drawback to these pretty leguminous shrubs as garden plants is that we do not find them reliably hardy.

How to grow Ærides virens, p. 231.—Mr. Parrell says, "In the winter season, or from November to May . . . it should be kept quite dry, almost to the suspension of water." "The Orchid-grower's Manual," the text-book on the subject, says, "The species of *Ærides* require but little repose, and the moss should always be kept damp."

Spiræa Van Houttii, p. 262.—One of the best and most profuse of early-blooming spiræas. It looks to me to be a fine form of *S. trilobata*. It grows freely and is perfectly hardy and extremely floriferous in our grounds.

"A New Shrub", p. 278.—Mrs. Thomson's description leads me to suspect that she discovered a *Styrax*, probably *S. Americanum*.

Single Dahlias and other Flowers, p. 281.—Single as well as double-flowered dahlias are

beautiful and desirable and our hearts and gardens have room enough for both. Speaking of single "asters and dogwood." By whom are single "Annual" asters recommended or seeds of them advertised for sale? If you mean the handsome perennial species as *A. laevis*, *A. speciosus*, *A. Curtisi* or *A. Chapmannii*, have you ever seen them with double flowers? I never saw a double-flowered dogwood, did you? "At the present day single roses are the applauded." Apart from *Rosa rugosa*, to what species or varieties of single roses do you refer, and by whom in America are they advertised for sale? I never saw a decent double-flowered variety of *R. rugosa*, did you?

Glen Cove, L. I., N. Y.

TUBEROSE BULBS FLOWERING AFTER HARD FREEZING.

BY MRS. J. S. R. THOMSON.

I much fear that I intrude myself too often upon the attention of readers of GARDENERS' MONTHLY, but this time I hope I have something of an experience to relate that will prove interesting.

This is my second season attempting to raise the bulbs by field culture for trade. In my eager readings, principally Peter Henderson's "Practical Floriculture" and "Field and Farm Topics," it is impressed upon us that failure to get bulbs to flower comes from their having been kept in too low a temperature in winter; that the flower germ was killed without injuring the bulb otherwise. My first attempt was an inglorious defeat. Quoting a purchaser of a few thousand bulbs, he says, "Pardon my frankness, it is meant in kindness, but out of nine lots purchased from Southern raisers yours was by far the sorriest lot of all." This damped my ardor somewhat, but I was not conquered, but determined to try and yet again try to see where the secret lay; was much exercised in mind to find sufficient quarters to store my excessive numbers of undersized bulbs and sets for next season's experiment. I had finally engaged a kind friend to store them in the large basement of a public institution, viz.: "Asylum for Blind, Deaf and Dumb," which is heated from garret to cellar by steam, but failed to get them there in time to avoid the intense cold of January and February, 1885, so unexpected and altogether unusual. Suffice it that our outdoor thermometer registered 10° below zero on five different days, and repeatedly down to zero, which effectually killed any expectation of having any sets or bulbs left, as they were only bagged and barreled and then

placed in my basement, a place with every glass window up, as in summer, and cold as—well, say charity, for brevity. In early March I ordered my man servant to go in, take them out and haul outside of the village to throw away, as already they were causing quite an offensive odor to exhale therefrom. He came with the report that there were great quantities not dead and rotting but already sprouting. I therefore had those separated from the bad and hopefully went to work to try again. I had previously been advised by a kind friend to replant those undersized bulbs, deep, and would then obtain the size required for trade purposes, which advice I accepted only in part, and here is the gist of my article. Those identical small bulbs that passed through such a terrible freeze are now in quantities in flower, with many more showing the flower bud shooting up. I had no hopes of getting any flowers from these frozen bulbs, and ordered from another raiser 300 bulbs for my own garden, and these small undersized bulbs now have as long stems and as fine flowers as those purchased. Who can and will explain the why and wherefore of this? Is it a freak, or are others mistaken? I ask only for information.

Spartanburg, S. C.

[Facts of this character are of great value to the cultivator, and the thanks of tuberose growers are due to the lady for so kindly furnishing them. Too often explanations are taken for granted by a whole community that should never have been accepted; and again explanations are received as covering the whole ground, that are only partially true. Now in regard to the belief that tuberose kept in a low temperature during winter will not flower the next year, we think there has been some foundation for this belief. It is said that the flower germ is formed in the tuberose bulb before it goes to rest in the fall; that if it is dug before it is inclined to rest naturally this embryonic formation does not occur. If such a bulb is planted in spring it starts at once to leaf growth and makes no flowers. But if a bulb that has not formed the embryonic flower be placed in a warm place it will go on and form the little germs of blossom, though the bulb is not growing in the ground. This has been our understanding of the value of warmth in winter to a dry tuberose bulb, and not that the germ rots under a low temperature. If this view be correct it will be readily understood how a bulb may be kept through a very low temperature all the winter and yet flower in spring. If it had formed the embryonic flower before storing, it would not need the higher tem-

perature to bring the flower on. We give these views with some hesitancy, as it would be far preferable to have actual facts from those who, like Mrs. Thomson, are observing and have wide experience.—Ed. G. M.]

MEXICAN POPPIES.

BY MR. CHARLES E. PARNELL.

The Argemons, or as they are popularly called, Prickly Poppies, are a group of exceedingly showy, free-flowering, hardy annual plants belonging to the natural order Papaveraceæ.

They are plants of free, vigorous growth, having spinous pinnatifid, bright green leaves, which are armed with slender prickles and marked with white stripes. The flowers, which are very showy (being from 2 to 3 inches in diameter), are freely produced on long peduncles, both axillary and terminal, during the summer months, the precise time depending upon the manner in which the plants are grown; while from their size, color and manner of flowering, they bear so much resemblance to a poppy, that the popular name, prickly Poppy, has been bestowed upon them.

The Argemons are plants that can be easily grown, doing best in a deep, well enriched soil, and as the plants spread widely, they require a good deal of room to look handsome and properly develop themselves. They are especially suited for the mixed border, where, if properly grown, will always attract considerable attention, on account of the large size and showy color of their flowers. The seed should be sown about the last of March or first of April in a well drained pot or pan filled with light loamy soil; sow thinly, cover slightly, and place in a warm, moist situation, as close to the glass as possible. As soon as the young plants are large enough to handle they should be transplanted into shallow boxes filled with light turfy loam, and placed in rows an inch and a half apart each way. These young plants should be kept close and moist until they become well rooted and growth commences, when they should be removed to a cooler situation, and where air can be freely given, and in this manner grown on until the weather has become warm and settled, when they can be planted outside. Or the seed can be sown very thinly in a cold frame in April, or on a nicely prepared border in May, and the young plants very carefully removed to the place it is intended they should bloom, as soon as they are strong enough to handle. But unless they are started under glass they will not flower

early. The following are the varieties briefly described:

A. *grandiflora* (large flowering), grows about 2 feet in height and produces large white, very handsome flowers.

A. *Hunnemanni* (Mr. Hunneman's), grows about 2 feet in height, and produces carmine and yellow flowers.

A. *Mexicana*. (The Mexican Argemon.) This is what is known as the Infernal, or Devil's Fig of the Spaniards, and is similar in all respects to the above named varieties, except in the color of its flowers which are of a bright yellow.

Queens, L. I.

SCRAPS AND QUERIES.

RUSSIAN OLIVE.—Messrs. Carpenter & Gage send specimens of the Siberian Pea shrub—which is correct—and is *Caragana arborescens*. The Russian olive is the old Siberian Oleaster, and is *Elæagnus Songarica*, cultivated under the name of *Elæagnus flava*. It is closely related to the common garden Oleaster, *E. hortensis*; the leaves and branches are not scurfy as that usually is, but are densely covered by star-shaped hair, and the leaves are short and broad, instead of long and narrow. The fruit is about the size of a small cherry, olive-shaped, with a somewhat sweet pulp. It is a very hardy and handsome bush.

A species from Asia, *Elæagnus parvifolia*, is an admirable hedge plant; in our opinion standing next to Osage orange and Honey locust. This is known in Eastern catalogues as "Silver Thorn."

RED APHIS ON ROSES.—"W. H. G.," Erie, Pa., writes: "I notice this year, on my rose plants, a number of insects identical with the green aphid, so far as appearances are concerned, except that it is of a reddish color. Do you, or any of your readers know anything about it? It eats the tender buds and leaves, just as the green aphid does, and succumbs to the same treatment, viz.: tobacco smoke, whale oil soap, etc."

[There are numerous species of aphid—green, black and red. The red referred to by our correspondent, is not a common enemy of the rose. It will be well for the rose-grower to watch for it. Powdered tobacco, or tobacco dust is good, where the liquid cannot be applied.—Ed. G. M.]

IVY ON TREES.—"W. C. B.," Philadelphia, writes: "In Laurel Hill Cemetery there is a cypress about thirty feet high, the trunk and lower branches of which are completely covered with a thick growth of *Hedera*, to the height of fifteen

feet. The branches of the cypress covered by the Hedera are all dead, while the whole tree from immediately above the Hedera is very healthy. From a little distance, this tree presents a very grotesque appearance, there being just half of each growth, each being so healthy, and the foliage forming such a contrast."

[The English Ivy, Hedera, like all other vines,

will smother the foliage of the tree it grows over; and wherever it gets the chance to grow over foliage in this way, will necessarily destroy the branches. So long as the vine is confined to the trunk or main branches, no injury results to a tree by having a vine grow straight up over it. When it coils around a trunk, as in the case of a Wistaria, it is a serious injury.—Ed. G. M.]

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

The quantity of the so-called Dutch bulbs in pots, for house decoration, has been surprisingly small during the few past years, in comparison with what is grown in other parts of the world, though it is pleasant to note that it is on the increase. It is pleasant to note it, for there are few things in gardening that give so much pleasure at so small a cost. When we speak of Dutch bulbs, Hyacinths, Tulips and Crocuses are chiefly referred to; but there are numerous other bulbs besides those specially cultivated in Holland, that are quite as desirable as they. In our seasonable hints recently, we entered more fully into this matter; at the present time we revert to it in order to note that they require richer food when growing, than people usually believe. They grow in water, it is true, where there is no food; but in this case, they have to feed chiefly on the food stored up the year before, and are completely exhausted by the time the flowering is done. This is one reason why a Hyacinth that has flowered in water, requires several years of growth in the open ground in order to recuperate; and even then does not do so fully, unless prevented from flowering for several years. When grown in pots, the earth cannot be too highly enriched, we think, though some people think manuring may be overdone. In this connection, the following extract from a letter from Holland, conveys some useful hints:

"To be scary of manure is not the practice of Holland. Sand and manure—manure and sand, are the alpha and omega of all things. It should be said, that, of course, the manure is in a very decomposed state; but a Dutchman relies on it implicitly, and the fields are enriched not only in the first instance, when they are recovered from

some barren waste, but again and again, so that fertility may not be impaired. A bulb, it is true, does not like to lie in manure—it should be cushioned in sand, and the roots should push downwards into the rich provision from which they get vigor and life. This tends also to keep them from being ever burnt up in the summer. It is when the rootlets have nothing proper to feed upon, that they come too much to the surface, and they cannot then stand the burning rays of the sun.

"An emphasis should be put on the thorough decomposition of the manure, but it cannot be bad practice to use it in this way, when such good results flow from it. Not to speak of Tulips and Hyacinths, I saw fields and fields of Lilies, which were perfectly innocent of shade, and yet doing quite well after this fashion."

There has been much dispute, of late years, as to what produces disease in Carnations and Roses, of which so many complain. That there is fungus in connection with the disease is certain; but the question is yet regarded by many as unsettled; whether the funguses are there as the guests of the disease, or whether they are established in housekeeping on their own account. No one who has seen fungus sweep through a cutting bench, can hesitate for a moment in his belief, that the fungus caused the death of the cuttings. Had fungus not got a hold there, the cuttings would have lived. Still, a cutting for want of roots, has a low vital power, and this low vital power may have invited the enemy. A plant with healthy roots would have resisted the fungus successfully. The lesson from this is, that if we would keep our plants from fungus diseases, we must study the laws of health as they affect vegetation, and practice good culture. Of late years, it is surprising how the laws of plant life are ignored by florists, especially in the single item of watering. Day in and day out, watering or syr-

ing goes on, whether plants need it or not. A plant should never have water when it does not want it; and excellent drainage should be applied to carry water rapidly away. Roots want air as well as water, and the soil should be somewhat open, in order to permit air to circulate through it. When the earth does not dry rapidly, something is wrong. It is no uncommon sight to see benches of Roses, Carnations and other things completely sodden, and the plants then die from root fungus. They do not always get root fungus in wet soil, any more than a badly-managed cutting bench always gets into trouble from the same cause. But one thing is certain, that where the soil is sour or sodden, root fungus prevails to a greater extent than elsewhere; and when the roots are injured, other fungi play havoc with stems, leaves and flowers. When fungus does appear, sulphur exposed to the hot sun, or a temperature equal to a hot sun's ray, is among the best remedies.

In the remarks so far, we have had in view the culture of flowers in benches, as practiced in florists' greenhouses, or in amateur greenhouses where flowers are needed on a large scale. We may as well condense for the smaller grower what we shall have to say of potting generally. In taking up things from the ground for potting, care should be taken to have the pots well-drained, with pieces of pots herds over the hole. The more rapidly water passes through the soil, the better plants will grow. Pots could be made without holes, and the water would all go through the porous sides in time; but that is too slow a way, so we make a hole to admit of its more rapid escape, and we place the broken pots over the hole to make a vacuum, which assists the objects of the hole. In very small pots, or with plants which have strong enough roots to rapidly absorb all the moisture they get, and speedily ask for more, "crocking" is not necessary.

COMMUNICATIONS.

THE AMARYLLIS.

BY H. NEHRING.

Genus Hippeastrum. I always read with much pleasure the various contributions on Amaryllis in your interesting and entertaining paper, especially Mr. Oberwetter's in the July number. I am an enthusiastic lover of this class of plants, and collect all I can get for a reasonable price. Since eight or nine years they are my favorite house

plants. I made the acquaintance of a few hybrid forms in the gardens of Houston, Texas, and New Orleans, and was struck with their great beauty and noble form. I tried to learn the name, but I was told they were "red lilies." At last I obtained a bulb and brought it with me to Missouri. It commenced to bloom in March in my window, and now I ascertained myself that it was Amaryllis Johnsoni, a hybrid of Hippeastrum vittatum. I then bought every year a collection, at first as many species as I could get, and later hybrids. The species I received from Haage & Schmidt (Erfurt, Germany), and the hybrids from the same firm and also from France, Belgium, Holland and England. It is a great drawback to the culture of these magnificent plants to call all without distinction Amaryllises. They certainly all bear this name, but this family comprises many different genera. The most magnificent genus is Hippeastrum (the Germans call them "Knight Stars"), commonly called Amaryllis, but Amaryllis proper, of which Amaryllis Belladonna is the type, differs from this genus. Next in beauty comes the genus Vallota, then Crinum, Nerine, Brunsvigia, Amocharis, Buphonia, Cyrtanthus, Haemanthus, Pancratium, Zephyranthes and others. We at present usually understand the various hybrids of Hippeastrum under that name; but it occurs in many catalogues that inferior things are enumerated under the name of Amaryllis. So I received under the name of "Amaryllis grandis" and "A. Olga" two Crinums; but plants of this genus as a rule are not to be compared with the glorious splendor of the Hippeastrum tribe. The true Amaryllis is a native of South Africa, whereas all Hippeastrums belong to our own continent, to tropical America. I have at present the following species in my collection:

1. (a) *Hippeastrum aulicum*, Herbert.
- (b) *H. aulicum platypetalum*, Herb.—Beautiful red flowers, glittering in the sunshine as if covered with gold dust; commonly three or four flowers on a flower scape. This species is evergreen and somewhat difficult to manage.
2. (a) *H. equestre*, Herb.—West Indies and South America. Smaller than the other species. Very beautiful red, with greenish-yellow star in the throat.
- (b) *H. equestre*, fl. pl.—has double flowers. Introduced to cultivation from the West Indies, where it is grown in gardens.
3. *H. bulbulosum fulgidum*, Herb.—Brazil. Flowers four on a scape, beautiful vermilion, throat yellowish within, greenish on the outside.

Of this species there are many varieties, such as *H. bulbulosum rutilum*, orange with yellow throat. Of this variety I obtained in Florida a few bulbs for my collection. Others are: *H. bulb. pulverulentum*, crocatus, ignescens; all in cultivation and easy to grow.

4. *H. Pardinum*, Hook.—Collected 1866 in Peru by Mr. Pearce for J. Veitch & Son. The ground color is creamy white or yellow and the whole flower is spotted with red. There are various distinct varieties. A very beautiful one was figured in "Flore des Terres" (pl. 634), under the name of "Reverend Dombrein;" another kind in *Revue Horticole* under the name of *H. pardinum tricolor*. All the hybrids of *H. pardinum* are very beautiful.

5. *H. psittacinum*, Herb.—Brazil. Commonly two flowers on a scape; white, striped carmine; throat green, striped purple. Not so showy as others.

6. *H. Reginæ*, Herb.—Mexico and South. One of the first known species in European gardens. Ground color cherry-red, throat green. Very fine and easy to grow.

7. *H. reticulatum*, Herb.—Brazil. Leaves short and with a white stripe in the centre, therefore easy to distinguish from other species. Flowers rosy or violet colored, with darker veins and reticulations. Not very easy to manage. From this species Mr. B. S. Williams (Upper Holloway, London) raised some of the finest *Amaryllises* in cultivation. They are in form, color and growth far superior to the mother plant, and indeed glorious. All are easy to grow and usually flower in autumn. One of these hybrids is *Amaryllis*, Mrs. Garfield, of which a fine plate was given in the *London Garden* (vol. xxii, April 7, 1883). Similar but rather more beautiful is *A. Mrs. William Lee*, and *A. Comte de Germiny*, with flowers from 6 to 8 inches in diameter.

8. *H. solandraeflorum*, Herb.—South America. Flowers long tubed, greenish-white with a little red; very fragrant. Much finer is the following variety: *H. solandraeflorum conspicuum*, Herb. Flower scape 3 feet high with six to eight large white, red striped flowers; very fragrant. In Dr. Regel's "Gartenflora" (1878, pl. 949) a beautiful plate of this fine variety is given.

9. *H. robustum*, Koch (A. Tettani S. A. Rougieri). Native of the German colony Santa Catharina, in Brazil, from whence this *Amaryllis* was sent to Berlin by Dr. Blumenan, 1848. It is an evergreen, strong growing, exceedingly beautiful species; has showy leaves. Flowers deep car-

mine. Blooms generally in the last week of December, and is called in Germany the Christmas *Amaryllis*.

10. *H. vittatum*, Herb.—Brazil. One of the best, and has proven very fruitful in raising hybrids. There are now thousands of named and unnamed *Amaryllises*, all raised from this species.

The flowers are white, with a red stripe through the centre of each petal; slightly fragrant. I have also a very fine variety, *H. vittatum Harrisonianum*, Herb., native of Lima. Flowers white with two red stripes. This species and all the hybrids are easily managed. The cheapest of these are those with a red ground color, as they are apt to produce more offsets than the light-colored forms. There are other *Hippeastrums*, such as *H. Leopoldi*, *H. pyrochroma*, *H. calyptatum*, which are scarce in cultivation. Other species like *H. ambiguum*, Herb., *H. breviflorum*, Herb., *H. barbatum*, Herb., *H. stylosum*, Herb., *H. miniatum*, Herb., and *H. glaucescens*, Herb., appear to be lost to cultivation.

I have the following hybrids in my collection:

1. *Hipp. (Amaryllis) Johnsonii*, Herb.—A cross between *Hippeastrum vittatum* and *H. Reginæ*. Raised by Johnson in Lancashire, England, 1810, and a year later by Dean Herbert. This is the common *Amaryllis* of our Southern gardens. It is one of the best for the beginner, as it is easy to flower, very fine and slightly fragrant.

2. *H. (Amaryllis) Cleopatra*.—Dark red, with a clear white stripe. An exceedingly beautiful hybrid.

3. *A. oriflamme*.—White, banded with salmon. Fine form.

4. *A. Prince of Orange*.—Fine orange red; very showy.

5. *A. Perle*.—Sulphur white, with large salmon stripes. The last two and *A. Olga* I received from Nanz & Neuner (Louisville, Ky). They have also many unnamed fine hybrids of *A. Johnsonii*.

6. *A. Defiance*.—An evergreen hybrid and one of the finest in cultivation. Has large carmine-red flowers with bars of white running through the centre of each petal, and the whole flower lined and penciled with white; large, very fine formed flowers.

7. *A. Artemise*.—Pure white with large vermilion stripes.

8. *A. Baffin*.—Very dark red.

9. *A. Clovis*.—Fine transparent red with large white stripes.

10. *A. Phoebe*.—Pure white, striped and striated

with carmine-rose. The last five with A. oriflamme can be obtained of Hallock, Son & Thorpe (East Hinsdale, N. Y.).

11. *A. Refulgens* and (12) *A. Atrosanguinea*.—Both very dark shining red, of fine form and texture. Cheap and very easy to grow. I obtained mine from Mr. Saul, Washington, D. C.

13. *A. Graveana*.—Beautiful red; a very fine hybrid. Advertised by Mr. Peter Henderson, New York. Besides these I have fine unnamed collections from Germany, Holland and France, many of which have not yet flowered. I mentioned only those which can be furnished by some of our leading florists.

1. *Amaryllis Dr. Masters*.—Flowers 6 inches in diameter, perfect in shape, the segments recurving so as to give a bold appearance. A deep crimson scarlet, colored to the base, with maroon shaded blotches. This is said to be the finest *Amaryllis* in cultivation, being unique both in color and form.

2. *A. Exquisite*.—A fine, well-defined flower, 7 inches in diameter, of exquisite shape, carmine scarlet, the larger or guard segments have distinct white stripes, whilst the others are beautifully flaked with the same.

3. *A. Fascination*.—One of the light colored type; flowers about 5 inches in diameter, segments



Amaryllis House at Veitch's Nursery, Chelsea.

Now I step to the finest hybrids in existence, but I do not know how to find words to describe their bright colors and fine forms according to their merit. The varieties of which I now speak were raised by Mr. B. S. Williams, Upper Holloway, London. These hybrids have become so popular in England that Mr. Williams found it necessary to erect a special *Amaryllis* house, in which thousands are grown at present. His magnificent hybrids are the results of many years careful labor and careful selection. If compared with the finest continental collections, which sell from \$40 to \$240 a dozen; they are cheap and are far more beautiful. Indeed, I have seen no *Amaryllises* that can be compared with these English kinds, either in coloring or form. Every lover of this class of plants should have at least a few of the following sorts:

perfectly round, regularly flaked and barred with reddish crimson.

4. *A. Harry Williams*.—A noble flower, about 8 inches in diameter, the segments about 4 inches broad and well shaped; the color is reddish purple, the centre of which is slightly flaked and penciled with white. A distinct type.

5. *A. Loveliness*.—Flowers about 7 inches in diameter, of rosy crimson color, white stripe in the center of each petal and also white margin.

6. *A. Mrs. Garfield*.—A cross between *H. reticulatum* and *A. Defiance*. Evergreen, leaves robust, with a white stripe. The flower-scape, which is thrown up about 2 feet, produces four to five flowers 6 inches in diameter, of good form and substance, and of a pleasing rosy-pink color, netted and veined with a darker tint of the same color; there is a white stripe in the centre of each

petal, producing a most charming contrast to the numerous crimson scarlet varieties now so common in collections.

7. *A. Mrs. William Lee*.—In growth this hybrid much resembles *A. Mrs. Garfield*, but the flowers are much larger and the color altogether richer. Similar is a new hybrid, *A. Compté de Germiny*, the finest of this group.

8. *Mrs. B. T. Williams*.—Pure white and of fine form.

9. *A. Masterpiece*.—Flowers 6 to 7 inches across; sepals and petals broad, nicely recurved; color rich crimson-scarlet, with a violet shade extending entirely to the base and not showing a particle of an eye.

10. *A. Prince Teck*.—Flowers large, ground color being of a soft creamy yellow, which runs down the centre of each petal; the edges of the petals are deep crimson and beautifully marked with netted lines of the same color.

11. *A. Princess Dagmar*. Petals of great breadth, margined and veined with carmine-scarlet, and having a light base; one of the finest forms and most brilliant in color.

12. *A. Triumphant*.—Flowers 6 inches across, carmine-scarlet, segments perfectly round, with a light base flaked with white.

13. *A. Unique*.—Extra fine form, petals broad, color deep bright scarlet, centre of the petals shaded with black, white markings in the throat.

14. *A. Williamsii*.—Petals of great breadth and substance, ground color carmine-scarlet and having a broad white band down the centre of each petal. Mr. Williams has raised many more beautiful hybrids, but these, I think, are the most beautiful. There is another celebrated *Amaryllis* grower in England, but I have not yet had an opportunity to procure some of his varieties. As soon as I know these hybrids from personal observation, I will give an account of them in the GARDENERS' MONTHLY. And now, dear reader, I beg your pardon for this long paper.

Friestatt, Mo.

[The readers will rather thank than want to "pardon" the author of this excellent paper. Correspondents are continually asking the Editor for the names of their varieties, showing the want of just these descriptive notes as well as the widespread interest being taken in this beautiful tribe. In the Old World particular attention is being given to their culture, and some nurserymen are making them special branches. We give with this a view of the *Amaryllis* House, as it is called, at Veitch's Nursery, Chelsea.—Ed. G. M.]

NAMENLOSE SCHÖNE ROSE.

BY EDWIN A. SEIDEWITZ.

Every year brings its novelties of Roses, few of which are what they are represented to be. Through this fact one cannot complain that there is not much confidence shown in a novelty. *Namenlose Schöne*, a novelty of this year from Germany is one, to be tested by the trade.

It was in the fall of last year that, in my travels I reached the watering place, Köstritz, a small town, beautifully situated in a fertile valley in Thüringen. It was the widely known Dahlia culture of Köstritz that was the attraction. After a few minutes' walk from the station one comes to the establishment of Mr. Max Deegen, Jun., II; entering, one is struck at once by great numbers of Dahlias in hundreds of varieties. While admiring this "star of autumn," several sashes planted with roses, in full bloom, drew my attention. Thinking them at the first glance to be *Niphetos* I gave no further thought to them. Coming nearer I saw that an error was made on my part; instead of *Niphetos*, quite a different rose was before me; asking an attendant near by, the name of the rose, he replies: "that is the new rose that Mr. Deegen is introducing."

After a short time Mr. Deegen appeared, and being questioned in regard to the rose, spoke of its good qualities in the highest terms. Mr. Deegen relates that this rose is not a true novelty in every sense of the word, for it has been in his possession for thirty-three years; originally received unnamed, among a lot of roses, hence the name, "Nameless Beauty;" the rose had been sent to different authorities on roses in Germany to discover if there might be a rose corresponding with the one specified; the rose was known to no one and for this reason it is introduced as a novelty.

Two specimens are in my possession since last November—bringing them from Europe. The following observations have been made since my return. After a long trip of over two weeks, the specimens were placed in a greenhouse; after a few weeks, to my astonishment, (they were brought over in pots in a growing state) a bud had set on one of its branches, showing at once one good quality of the rose, budding after such rough treatment. The bud, half open, was small, finely shaped, white, with a yellowish tinge open: full, like the *Souvenir de la Malmaison*, sweetly scented, even extremely so, slender carriage, in short, the impression made was excellent.

In June the roses were planted out in a sash,

roots having settled, they began to grow and to bloom, being at time of writing in full bloom. In the open ground the color is quite different, its color resembling more the Mrs. Bosanquet, a flesh-color to the center, showing no sign of yellow at all.

Three or more buds generally appear on one branch, habit is good; dwarf and compact, adorned with a fine foliage of light color and glossy appearance.

In regard to worth for cutting purposes, I would say, that for long stems it will not do as well, but for design work, there is no rose of this color better suited than this *Namenlose Schöne*. All in all, the rose makes a very favorable impression, especially being such a free bloomer.

This rose will surely have a future, and it can be recommended very highly to the trade and public in general.

Annapolis, Aug. 10th, 1886.

ÆSCHYNANTHUS PULCHER.

BY CHARLES E. FARNELL.

The pretty flowered *Æschynanthus*, *Æ. pulcher*, is an epiphytal evergreen stove or warm greenhouse plant, belonging to the natural order Gesneraceæ. It is a native of Java, and was discovered and introduced by Mr. Thomas Lobb, a collector in the employment of Messrs. Veitch & Son, of London, England, in 1845. It is a plant of trailing or drooping habit with slender stems, which show a tendency to root at almost every joint, and thick fleshy lanceolate leaves of a dark green color, which form a striking contrast with the bright scarlet flowers. When well-grown, this forms a plant of rare beauty, and it is a most profuse flowerer, blooming as it does throughout several of the summer months. The flowers are produced in axillary and terminal fascicles, in color of a rich vermilion scarlet, with a trace of yellow in the throat. This *Æschynanthus* is a plant of the easiest culture, if it can be given sufficient heat and moisture, and succeeds best when fastened upon a log and cultivated in the same manner as epiphytal orchids. It should be grown in a partially shaded situation, or where it will be shaded from the hot mid-day sun. I have cultivated this plant in a very satisfactory manner, by procuring a block of wood about a foot in length and from 6 to 9 inches in diameter. At one end a shallow hole is excavated, about 3 inches in depth and 3 or 4 in diameter; this is filled with

sphagnum moss, on this the plant is placed, its roots covered with moss and the whole securely fastened to the log by means of copper wire; this block is then suspended from the rafters of the greenhouse, and the plant treated as above advised. This *Æschynanthus* should be given a temperature of not less than 58° during the winter months, and care should be used as to watering, yet do not permit the plant to become absolutely dry. During the summer the plant should be given a liberal supply. Propagation is effected by cuttings of the half-ripened wood, placed in sand in gentle heat; when rooted, pot off into 3-inch pots (well-drained) of fine chopped fresh moss and place in heat; and when the small plants have made a considerable growth, place in blocks as advised above.

The generic name is derived from "aischuno," to be ashamed, and "anthus," a flower; but one cannot understand why this term should be applied to this handsome class of plants, as all of them are deserving of a prominent place in all choice collections.

Queens, N. Y.

POTTING HYACINTHS.

BY WM. LYNE.

As the season for potting Hyacinths, etc., is near at hand, and never having seen the method I practice, in print, although others may practice it, I deem it of some importance in the way of cleanliness and convenience; hence this communication, that others, if they choose, may avail themselves of it in preference to burying their pots after planting. I first select such sized pots as are suitable for the different kinds of bulbs and plant them in the usual way, treating Hyacinths, Tulips, Crocuses, Narcissus, etc., all alike. I then take pots smaller than the pots in which the bulbs are planted, fill them with earth and invert them over the bulb, pressing them down slightly; thus I secure the necessary darkness while the roots are penetrating the soil, the weight of the pot and contents preventing the bulb from rising, as is sometimes the case.

I then set them in the cellar, or on the floor of the greenhouse, or other convenient place, give attention to watering, and upon inspection, which is easily done, select such as are the farthest advanced, removing the upper pots, placing those selected in the light, pursuing the usual course; the Romans especially soon go into bloom.

Fort Wayne, Ind., Aug. 27th, 1886.

EDITORIAL NOTES.

CALLAS IN SUMMER.—A wreath of Callas formed part of the flowers used at the funeral of Governor Tilden. They were grown by his own gardener. Florists generally do not have callas in bloom early in August.

CARNATION FROM WALLINGFORD, CONNECTICUT.—A correspondent sends us a flower of a pale sulphur seedling that is 3 inches over, with numerous petals, from a short oblique calyx. It appears to be distinct from any other variety in

common use. Its value to the florist will depend on abundance and continuance of blossoming, fragrance, and other properties that a single flower cannot reveal.

EUPHORBIA JACQUINIFLORA.—There seems to be some disposition among florists to take again into favor this old plant. Its brilliant scarlet flowers are so exactly suited to many forms of longitudinal work, that nothing can equal it. It was not supposed to "pay," but it is found in the cut flower business as in all others, that the best work will always bring the best prices, and some flowers are especially suited for the best work.

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

In preparing our Seasonable Hints it is interesting to note how much practical fruit culture advances. Practical men thought they knew something a quarter of a century ago, but no one would give the same directions for culture now that would have been given then. And we think we advance faster than they do in the Old World. Looking at some horticultural calendars, recently issued in England, not one word is said about potted strawberry plants, which have been found such a great time-saver here. And in fruit tree culture generally we find the same old-fashioned advice, not to give fruit trees much manure, for fear of giving a rank growth to them. In this country we have outgrown this weakness. Provided all other elements of good culture are cared for, it is almost impossible to give fruit trees too much manure. Indeed, much of the trouble with fruit trees comes from their being half-starved. A pear or apple tree may have a foot deep of well-rotten—say one year old manure, placed for yards wide around the trunk under the branches, and it would be all the better for it. Of course this would be too much of a good thing. Such a dressing of manure would never pay. But we are speaking of absolute health to the tree, and productiveness in splendid fruit. It is when fruit orchards are deeply hoed, harrowed or plowed late in the autumn and the soil is rich, that the trees suffer. The young roots, nearly resting, are engaged in

storing nutriment in the buds and branches for another year. When these roots are torn off the main roots proceed at once to make new fibres, and with this a new growth of foliage and length of branches. Then this growth does not mature before winter, and is more subject than healthy wood, to disease. If the soil is poor the new roots do not push much, nor is the growth much affected. This is the only way in which poor soil for fruit trees is ever an advantage. But it is a greater advantage to let the fall roots alone, and give all the food possible for the roots to work on.

No question is more frequently put to an editor than, what is the best soil to plant fruit trees in? There can be no specific answer to this question. In a general way the answer might be, that any soil that would grow good potatoes, corn, or any vegetable crop, would be a good soil to grow a fruit tree in. But even this does not wholly answer the question, for in Massachusetts or Connecticut one may plant apple trees quite successfully on hills covered with boulders and loose rocks where no one would think to get a vegetable crop; yet there are some soils better suited to some classes of trees than others. The peach, as a rule, does best in light soils; the pear in heavy ones; the apple in a soil that is a mixture of clay and sand; while the cherry, we think, prefers a soil that is made of broken stone. But it is not safe to say that even these soils are better for the trees named. We have seen, sometimes, excellent peach trees in heavy clay. The pear and apple do well

in pure Jersey sand, and the cherry, usually delighting in high rocky ground, seems particularly favored by a piece of low flat ground.

So with culture. There are plenty of illustrations where clean culture is found admirable, and others where trees do much better in grass than when the ground is exposed to very hot sun. The experienced cultivator comes to learn that success in culture comes from a study of little things that tend to the health of the tree, and not so much from any general rule of soil or situation to fruit culture as a whole. These little things consist mainly in choosing soil that does not absorb heat freely, as cool soil in America is essential in most localities. The soil must not retain water long enough to "sog" it, nor must water run so rapidly away that it will soon dry out. There must be abundance of good food near the surface where the fibres or feeding roots are, and these must never suffer for the want of it. There is little else to be said of choosing soil. There is much more in choosing trees than in choosing soil. A cheap tree is generally dear at any price. A new venturer in peach growing recently showed the writer two thousand peach trees that he had planted. One thousand were trees about five feet high, rated by the nurseryman as No. 1 trees. The stock giving out, No. 2 trees were sent to make the balance. After one year's growth under the same circumstances it was a remarkable sight in the difference. The No. 2 trees were still puny and poor looking in comparison with the No. 1. The owner thought he might be able to make them catch up by giving them liberal fertilizing, but it was a poor hope. The trees were smaller than the others in the first place, because they had poorer constitutions, or they would not have been small under equal circumstances. The constitution being poor, the tree can take no advantage of the best food that may be given it. At least to but a small extent.

EDITORIAL NOTES.

INCREASE OF FUNGUS DISEASES IN THE SOUTH.—President Berckmans in his recent address, notes that the three past seasons have been more rainy than usual, which he thinks may account for the remarkable prevalence of parasitic fungi among fruit trees.

FRUIT SYNONYMS.—President Berckmans asserts that some popular varieties of peaches are

pushed by interested parties, under a dozen different names.

GOOD VARIETIES OF FRUIT TO TRAVEL.—Mr. Holsinger told the late meeting of the Kansas Horticultural Society, that, whether a variety would travel well, often depended as much on the packer as on the variety. Speaking of raspberries, he said, if one dead-ripe be put with the others, it soon starts decay among the whole brotherhood. Dead-ripe fruits should be carefully discarded in packing fruits of this kind.

BACTERIA AND PEAR BLIGHT.—Prof. Burrill, decides that the Bacterian found in connection with pear blight is no ordinary fellow, but a species hitherto undescribed. He names it *Micrococcus amyvorus*, as we see quoted in an exchange, though we have not his original description to hand.

THE FRUIT HOUSE OF ELLWANGER & BARRY, ROCHESTER, N. Y.—Col. Wilder says that the fruit house of Ellwanger & Barry, at Rochester, N. Y., is a building where walls and floor are lined with straw and boards, with cellars underneath for storing fruit. When the mercury goes 10° to 12° below zero, a few, 3° or 4°, of frost get in, but the boxes and barrels are all covered with straw mats and are never reached by the frost.

PHYLOXERA IN THE OLD WORLD.—In spite of the oppressive and absurd laws by which American horticultural products are practically excluded from the Old World for fear of introducing Phylloxera, it is steadily on the march there. The latest reports state that it has appeared in the East, and the ancient countries of Macedonia and Calcedonia are now exclaiming—as they did in olden times—what shall we do to be saved? Now that they have it, perhaps also will they make laws to exclude it.

PEARS AT THE CAPE OF GOOD HOPE.—Every locality on the globe has some spot more favorable to some kinds of fruits than others. At the Cape of Good Hope, South Africa, Beurre superfin and Glout Morceau have proved admirably adapted, and an export trade to England is springing up likely to be very profitable to Cape of Good Hope Pear growers. England is the market for them.

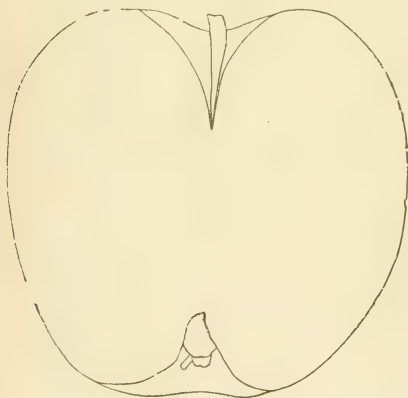
PROFITS OF APPLE CULTURE.—"Is the apple culture a good one?" some one asks Mr. De Long, a well known California fruit grower. "Yes," he replies, "if you raise good apples." What an excellent text is here for all fruit growers.

DRIED APRICOTS.—This is becoming a very popular article in California, and drying apricots becoming a profitable branch of industry.

APPLE CULTURE IN NOVA SCOTIA.—Apple culture is progressing in the province to such an extent that 100,000 barrels were received in England last year. The Red Canada seems the variety chiefly depended on.

PINE-APPLES IN FLORIDA.—Where the proper localities are chosen in Florida, it would seem that pine-apple growing is destined to be one of the staple cultures of the State.

WATER APPLE.—It is over twenty years ago since we called the attention of our readers to this wonderful Pennsylvania apple, and yet little is known of it to-day. One of its class, the Smith's Cider, has managed to get a fair run, but it is a comparatively poor grower, and nurserymen do



not like to keep it. The Water Apple is fully its equal in everything that relates to popular characters, and is besides a good grower. We reproduce a cut we gave of it at the time of first describing it, in hopes that those interested in introducing good apples to orchard planters may give it some attention.

THE STRAWBERRY KINGS.—People who enjoy everywhere delicious fruit at very moderate prices, scarcely stop to think of how much they are indebted to a few persevering men, who have settled in various districts, and by studying improved modes of culture produced abundance where before sterility reigned. One of these in Ohio is Mr. M. Crawford, who does much good service as

Secretary of the Summitt county (Ohio), Horticultural Society.

Reading the past summer in a Western paper the following extract in relation to the enormous business done in strawberries, we fancy we are not mistaken in identifying this gentleman with so much of the immense good to the whole community that has followed this splendid work:

"The Barnesville district of Ohio this week exhibited its wonder in strawberry culture to the eager eyes of visiting horticulturists, as our delegate has reported. But its products are eclipsed by a belt of territory lying along the Illinois Central Railroad, over which special thunderbolt express fruit trains have been run on schedule time for thirteen seasons, until it now consists of 30 refrigerator carloads per day, 22 of which go to the commission men of Chicago, whose 800,000 inhabitants consume 435,600 quarts per day, at a cost of \$15,000 for each train load, or about \$350,000 for the three weeks' season. This represents only a small part of the traffic in the fruits of this country, which is constantly increasing. The ease and certainty with which they may be grown is reason why it should be done."

THE CATAWISSA RASPBERRY.—When we read here and there that this or that variety of fruit is "no good," we must remember that this is usually from the market-growers' standpoint. The Catawissa Raspberry would not earn its salt from anyone who should plant it for market. But what a glorious delicacy it is for the amateur! Plants should be cut to the ground in the spring, and very rich food given it. Through August and September it will yield large quantities of raspberries of the most delicious flavor. We know of no variety that can compete with it in toothsome-ness.

A NEW RASPBERRY, RUBUS PHENICOLASIUS.—This is a very handsome Bramble, striking at first sight from the shaggy crimson glandular hairs with which it is so plentifully beset, and from which it derives its name (*phenix*, red, *lasios*, shaggy). The leaves resemble those of the Raspberry, but are of a silvery white on the under surface. The flowers are in terminal panicles, the pedicels and elongated calyx-lobes densely clothed with long crimson hairs, each tipped with a small globular gland. The fruit is about the size of a small Cherry, clear orange-red, shorter than the persistent calyx-lobes. It is noteworthy that while the fruit is unripe and green the calyx-lobes fold over it, and thus protect it from the incursions of birds, while the viscid hairs keep off undesirable insect visitors, but when the fruit ripens the sepals unfold, spreading horizontally,

forming a flat dish, on which the fruit is presented for the attraction and appreciation of birds, who, after regaling themselves, secure unwittingly the perpetuation of the species by ejecting the seeds. The plant is a native of Japan, and for a specimen of it we are indebted to the Rev. Canon Ellacombe, in whose garden near Bristol, it proves to be quite hardy.—*Gardeners' Chronicle*.

WINTER PARSLEY.—Many who sow Parsley in autumn, do not have much success, because they commence plucking the leaves too early. Wait till the plants get strong. It is best to pot a few old roots, and keep in a temperature of about 50°, to get an early supply from. When these are done, the seedling plants will be ready.

LARGE TOMATOES.—We do not know that there has been placed on record, figures regarding the largest Tomatoes ever raised. Mr. Jacob Pringle, gardener to Fairmount Park Commissioner Fitler, raised one 2 lbs. 1 oz. Can anyone beat this record?

VEGETABLES.—M. Van Hulle counsels us if we would preserve the flavor of our vegetables, not to wash them before cooking, if it can be avoided. The vegetables, whether leaves, beans, or roots, should have the dirt removed with a brush or a cloth, or if washing be indispensable, it should be done rapidly, immediately before placing them in the saucepan.—*Gardeners' Chronicle*.

SCRAPS AND QUERIES.

THE BLACK APHIS ON YOUNG CHERRY TREES. It is confidently asserted in England that one quart of tobacco juice to two gallons of water is certain death to the Black Aphis. Our nurserymen who suffer so much from this pest should devise some easy method of syringing this decoction over trees that are badly infested with it.

PECULIAR RIPENING OF PEARS.—"J. H. P.," Dayton, Ohio, writes: "A few words on the proper ripening of pears in your last number suggests that information from yourself, Pres. Wilder, or other competent authority on that subject, in the October number, would be highly appreciated. For many kinds a good cellar, properly ventilated, answers very well, but for others—Winter Nelis, Lawrence, Beurre D'Arenbergh, and probably many others—this does not answer with me, and

I, and doubtless many others, would be glad to have the way that has proved successful.

[As noted in our last, there are little peculiarities in pear ripening that can only be discovered by the experience and observation of those who pay close attention to each variety. One kind loves to be gathered at a comparatively early stage, while another insists on being allowed to remain on the tree as long as possible. And even these requirements, we fancy, will vary in the same variety with different localities. It would serve a very useful purpose if those friends who have discovered the whimsicalities of these particular varieties, so as to have the very best results from them, would give their experience for the benefit of lovers of good pears.—Ed. G. M.]

APPLE TREE DISEASE IN KANSAS.—A correspondent from Emporia writes: "I have been much interested in studying the Fire blight which has attacked quite generally and severely our apple trees through this State. Our orchards have been such an attractive feature that we look with grave alarm at the ravages of this disease. I have been investigating with my microscope, and notice the presence of "Bacteri," which, according to Prof. Burrill, of the Illinois University, is the cause of the blight."

QUINCE ON THE WHITE THORN.—"Allan," Richmond, Va., writes: "Tell your correspondent of August issue that the Quince can be budded on White Thorn, but don't succeed at all in this section. Trees five years old are not larger than a bush two years should be, and show no vigor."

SOOT.—A Louisville, Ky., correspondent says: "When you Eastern people talk of "soot" do you mean soot from the burning of wood, anthracite coal or bituminous coal?"

[Any one of them. In this part of the world when one wants a little "soot" it is knocked out of an old stove-pipe in which either anthracite or wood has been burned. In bituminous regions the scrapings of the chimney would be "soot." Possibly in some cases one variety would be more desirable than another, and when such is the case, writers should take our correspondent's hint, and specify it. Where no distinction is made—as, for instance, in preparing a wash of sulphur, lime and soot for fruit trees, we should understand that any variety would do.—Ed. G. M.]

IMPROVEMENT OF THE GRAPE IN TEXAS.—The following letter was not intended for publication, but to keep the Editor posted on the work of grape

improvement in Texas. But it contains so much of interest to everyone interested in the success of American grape culture everywhere, that we are sure the writer will excuse the publicity we give it. We may premise that few of the ordinary varieties of grape are of any great account in Texas, and therefore all efforts for great improvements have to be recommenced from the beginning. It is on this account that the experiments being made by Mr. Munson, have a peculiar value.

"DENISON, TEX., August 24th, 1886.

"I present you herewith samples of a few of my seedling and hybrid grapes, which ripen from one to two weeks later than Catawba, Norton's Virginia, and Herbemont, and of course of no value in the most northern States, but they fill a vacancy in the South, which so far is without grapes, save the tough-skinned Muscadines. These are mostly mere sprigs of clusters, from young vines just beginning to bear, hence you can form but little correct opinion of the clusters. We have had a very long severe drouth, which has dwarfed the berries, and my vines are on land in use for nine years in various crops without any manure, with very ordinary culture; so you can form some idea of what the grape would be with high culture and age. You can judge of color and quality quite accurately. I have had a succession of my seedling grapes, since June 25th, and have this year fruited several hundred of my seedlings. I have no vines for sale. I desire to be perfectly sure I have made a true advance in any direction before I offer plants for sale, and hence I have taken the liberty to send you these clusters to taste, and to your pleasure to say what you choose concerning them, which I know will be a fair index of the merits of my productions. Out of some 30,000 seedlings, with which I started, I have continued to cull till I have a few I am not ashamed to ask an esteemed critic to taste. I am not seeking to rush before a much-abused public with an untried novelty, or the result of an accidental find in some weed-patch, but to make a real advance in horticulture, under all scientific and practical light bearing in this direction. Years more of patient trial may be required to find out whether I have anything worthy of general attention.

T. V. MUNSON."

[The grapes are of white and black varieties; the whites as a rule being rather better in flavor than the dark-colored ones. The whites are named Nellie, Onderdonk, Samuel Miller and Matthews. The dark-colored are Texas, Meehan, Carman, Husmann, Wine-maker, Maria and Jæger. Rogers No. 1 (Goethe), and 14 (Essex), and a bunch of Herbemont, came with the others for comparison. Herbemont is delicious; but the other two of Rogers' seedlings are not equal in flavor to the same variety as grown North, which we believe is the usual behavior of all the northern

varieties. The seedlings are far superior in flavor to these. The seedlings do not seem to us to be equal in flavor to the Herbemont, though Jæger and Matthews are very close to it in this respect. Of the black varieties, the Carman is nearest Herbemont in flavor, though the Meehan is nearer that variety in size of the bunch. The mere flavor or size is, however, only a small part of all that goes into the merits of a first-class grape.

—Ed. G. M.]

VARIATION IN THE LINDLEY GRAPE. — With samples, we have the two following notes from Mr. Lorin Blodgett, of Broad street, Philadelphia :

"I bring a sample of the growth of my Lindley this year—hoping to meet you here. I leave it here, after handling for four days, to show how persistent the grapes are. The general growth of the vine is greater than in any former year, and it bears an enormous crop. Many hundreds of the bunches show the apparent separation of the two original varieties hybridized, and while I cannot now find an explanation of the original varieties hybridized, I assume that the smaller is the European parent. It looks like the Delaware, and my belief last year was that the Delaware vine growing alongside and intermingled with the Lindley caused the new departure, which was then only on the side so exposed. Now the divided bunches are more general, and among the most luscious of the growing branches, and largest bunches. It is certainly an anomaly, and an illustration of the possibilities of hybridization. I will send a larger box, possibly at the same time to-morrow."

"August 25th, 1886.

"I send from my house this morning a second small box of Lindley grapes—Rogers' No. 9—put up from picking last evening and an average of five times as many picked. They are still not fully ripe, but the sparrows are about, and I wish you to see the peculiar separation of the two varieties on the bunches as they have grown. I could cut many growths of the vine 14 feet long and well ripened this year. It was never more vigorous, and altogether has a large crop of some thousands of bunches."

[It must be a very interesting sight to see this vine loaded with fruit, one-half looking like bunches of Delaware, and the other half what it is, Lindley, and some of the bunches with the large sized berries of Lindley on part, and the rest of the bunch with these half size berries like Delaware.

Without a very wide experience, an observer would be pardonable for believing that in some way a Delaware would be answerable for the result.

But when we come to taste the small berries we find that the flavor, as well as the color, are ex-

actly Lindley with nothing of the Delaware there, and we also find that not one of these berries has a seed. This explains the whole circumstance—they are simply seedless Lindleys. Those who have had experience with growing the foreign grape under glass understand this perfectly. The Muscat of Alexandria often produces seedless grapes, and these are only half the size of the normal seed bearing berries. It looks just as if a Sweet Water had fertilized the Mus-

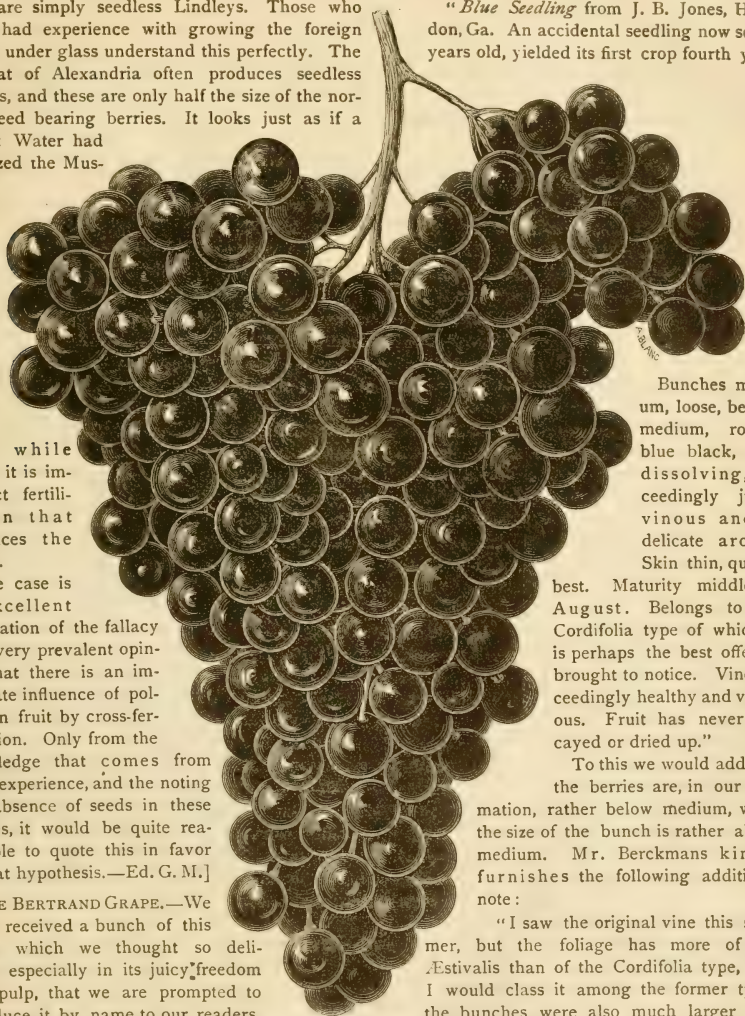
exception we believe has been found in this. The description is from the Proceedings of the American Pomological Society for 1885, p. 17:

"*Blue Seedling* from J. B. Jones, Hern-don, Ga. An accidental seedling now seven years old, yielded its first crop fourth year.

cat, while really it is imperfect fertilization that produces the result.

The case is an excellent illustration of the fallacy of a very prevalent opinion that there is an immediate influence of pollen on fruit by cross-fertilization. Only from the knowledge that comes from wide experience, and the noting the absence of seeds in these berries, it would be quite reasonable to quote this in favor of that hypothesis.—Ed. G. M.]

THE BERTRAND GRAPE.—We have received a bunch of this grape which we thought so delicious, especially in its juicy freedom from pulp, that we are prompted to introduce it by name to our readers. We have been very chary in introducing fruits to the community merely because they are new, deeming it an evil to add to an already overburdened list, unless something that we regard a real advance should be offered. This



Bertrand Grape.

Bunches medium, loose, berries medium, round, blue black, pulp dissolving, exceedingly juicy, vinous and of delicate aroma. Skin thin, quality

best. Maturity middle of August. Belongs to the Cordifolia type of which it is perhaps the best offering brought to notice. Vine exceedingly healthy and vigorous. Fruit has never decayed or dried up."

To this we would add that the berries are, in our estimation, rather below medium, while the size of the bunch is rather above medium. Mr. Berkmans kindly furnishes the following additional note:

"I saw the original vine this summer, but the foliage has more of the *Estivalis* than of the *Cordifolia* type, and I would class it among the former type; the bunches were also much larger than those sent to me last year, and the yield was upwards of two hundred perfect bunches. It will be a valuable variety for the Southern States and doubtless so for red wine."

FORESTRY.

COMMUNICATIONS.

THE USES OF OUR NATIVE TIMBER.

BY W. C. BUTLER.

The Live Oak is in great demand for ship building, but is becoming very scarce. Our matchless White Oak is used for wagons, railway cars, furniture and general framework. Rails and shingles are made of Chestnut Oak, and Iron Oak makes good fence posts.

The Hickories, *Carya alba* and *C. glabra*, are used in the manufacture of wagons, railway cars and tool handles. White, Blue and Green Ash are used in immense quantities for wagons, agricultural implements, cabinet work and interior finishing; it excels all other woods for boat oars. Black ash is useful for coopering and basket making. Poplar is largely used for panneling in wagons and railway cars, and for household utensils. White and Black Walnut are extensively used for furniture and interior decoration. White walnut is also made into shoes for use on damp floors.

Chestnut makes the best and cheapest telegraph poles, is largely used for railroad ties, sometimes for interior finishing and in the South for fencing. Thousands of cords of Cherry are annually manufactured into furniture; it is easily polished, and is stained in imitation of Ebony, Mahogany, Amaranth, Cocobola, etc.; it makes a handsome interior finish, and is used for tools. The Wild Cherry, *Cerasus serotina*, surpasses any of its species for cabinet work; it receives a high polish.

Mathematical instruments and tools are made of Apple and Pear. Sassafras is used where bending is required. The Elm is used for hubs and running gear of railway cars. Rock Elm is largely exported to Europe, where it is used for ship-building and wagon work. Most elms form excellent timber. The dark colored portion of the Sweet Gum so nearly resembles walnut that it is often used as its substitute. The Sour Gum is in demand for hubs. White Cedar, *Cupressus thyoides*, is used for shingles, fences, telegraph poles, building purposes, interior finishing and wooden ware. Lead pencils, pen handles, etc., are made of Red Cedar. The Yellow Cedar,

abundant in Alaska, furnishes a timber for ship building, in which the teredo worm does not work. *Arbor-Vitæ*, *Thuja occidentalis*, is used for stakes, poles, etc. California Redwood is used in its native State for building purposes, and in the East for furniture and interior decoration. The toughness and elasticity of the American Larch gives it a value for spars for vessels; it is also used for fence posts and stakes. Spruce is used for frame work of buildings.

Of the maples the Red is the most valuable, for it furnishes the Curled Maple, so highly prized for furniture, interior decoration and gun stocks; the plain part of this timber is also used for furniture and for turning and wooden-ware. Sugar Maple is used for interior finishing, furniture, ship building, shoe-lasts and saddletrees; this species furnishes the Bird's Eye Maple, so widely used for furniture and interior finishing. The Soft or Silver Maple is largely used for cheap furniture, flooring, turning, wooden-ware, framing for machinery, and shoe pegs. Baywood is extensively used as a substitute for mahogany in the manufacture of furniture and interior decoration.

Betula lenta, called Black, Sweet and Mahogany Birch, is as handsome a wood as Honduras Mahogany. It is used for interior finishing and furniture. The Yellow and White Birches make lasts and tool handles. Beech is used for tools and framework for machinery. Sycamore is a fine wood for interior finishing and furniture. Linden is useful for furniture and carriage work where bending is required, it being little liable to crack or check. Ropes and bast matting are made of the inner bark. *Catalpa speciosa* is extensively used for fence-posts, building purposes and railway carriages. It is more durable than White Oak for railway ties, and vies with Chestnut for telegraph poles. Hemlock is used for framework of buildings. The Cucumber tree furnishes wood for ploughs and wagons, and makes the best pump logs. In the Southwest wood of the Osage Orange is preferable to all others for bows. It is the most durable of all our timber. Wagon running gears and agricultural implements made of this wood will remain in excellent condition for a number of years without paint. Cottonwood is used for furniture and interior decorations, but to

no great extent, for, though a handsome wood, its interlocked grain renders it unprofitable for finely finished work.

The Willows, *Salix candida*, *S. viminalis*, *S. purpurea*, *S. Russelliana* and *S. rigida*, are used for basket making. Basket Willow is imported in immense quantities, not because our species are inferior, but because there is not enough grown here for our own consumption. No wood excels the

White Pine, *Pinus strobus*, is used in immense quantities for building purposes, and makes excellent ship masts. *P. palustris* is very extensively used for building in the South. *P. rigida*, Pitch Pine, is extensively used for flooring and ship building. *P. mitis*, Yellow or Spruce Pine, and *P. resinosa*, Norway Pine, are extensively used for building purposes. *P. palustris*, *P. mitis* and *P. resinosa* have a very rich and lively appearance when used for interior finishing. The conclusion of the Eucalyptus controversy, as to its timber, is, that in this country it is useful for railroad ties and excellent for wharf piles and ship building, as it is never attacked by the teredo, but is not profitable for construction, which requires much working, it being too hard and the grain too much interlocked.

The barks of the Black, Scarlet and White Oaks, Black, Silver and Golden Wattles, Chestnut and Hemlock are used for tanning.

3904 Melon Street, Philadelphia.



Pin Oak.

Black Locust for fence-posts. Honey Locust is also used for fencing. Hornbeam is useful for tools and framework of machinery. Iron-wood makes the best levers and derricks. The bark of the Leatherwood is used for ropes and baskets. Dogwood is extensively exported to Europe, where it is made into weaver's shuttles. Mulberry is used for furniture and interior finishing, and is unsurpassed for boat building, being very elastic.

EDITORIAL NOTES.

SLOW OR FAST GROWING OAKS.—It is surprising that the Oak has had the reputation of being a slow-growing tree. This reputation probably comes from the Old World, where the growth of the English Oak is acknowledged to be slow. In our country this species does better. It often makes three, and generally two, growths a season. Thrifty branches generally have an annual lengthening of 3 feet, and we have seen 5 feet as a single season's growth. Our native oaks all grow with fair average rapidity—the White Oak only, in the Editor's experience, being rather slow. The average growth of a 25-year-old tree would be over 20 inches a year, which is as much as most forest trees grow. We give with this an engraving of a Pin Oak, which in Germantown, in soil not by any means rich, reached 20 feet high in a growth of ten years—the first few years of seeding stage not being counted—and 20 inches in circumference.

FORESTRY.—Magazines of forestry seem unfortunate. *Forestry*, an excellent magazine published in Edinburgh and London, has ceased publication. There is a wide spread sentiment that "something should be done to preserve and

renew our forests," but it is only a sentiment, those who hold it for the most part preferring that others shall find out what that "something" is and also pay for the investigation. It comes down to our teaching, that we must show that forest planting will pay a forest planter, before forestry will become popular enough even for a journal devoted to it to be able to exist.

THE TULIP TREE IN EUROPE.—The Tulip tree, or *Liriodendron*, thrives very well in some parts of the Old World. There are some beautiful speci-

mens on the grounds of the Chateau d'Eau, in Normandy, the chief residence of the Comte de Paris, before his expulsion from France, and which were introduced from America by his grandfather, King Louis Philippe. In England there are specimens 80 feet high and 12 feet in circumference, notably at Taplow Court.

JAPAN METHOD OF PRESERVING TIMBER.—Timber is soaked for several seasons in salt water, but the proportions of salt to water have to be very exact.

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

ADDITIONAL FACTS ABOUT THE MISTLETOE.

BY G. ONDERDONK.

Mr. Eisele speaks of "this miserable parasite," as if it were to be dreaded here as in the apple orchards of the old world. It has been on a hackberry tree on my grounds, for more than twenty-five years, has not spread to any other tree that I know of, and has even confined itself closely to the branches where it first began. I should, indeed, be sorry to have it removed, as it is one of the interesting plants in my collection. I really intend its propagation, for sale as an ornamental plant, well becoming many grounds. How tastes vary!

During the winter, 1864-65, in Lavaca Co., Texas, I came across a grove of what we call Black Jack (a variety of oak), that I think had mistletoe on quite every tree for several acres. I have been in Southern Texas for thirty-five years, have traveled considerably over it, and this was the only considerable patch I have yet seen, although there are scattering individual samples all over the region—mostly upon Black Jack and hackberry trees. I have seen it once or twice on Post oak, but probably never on Live oak.

There was much about this great collection of mistletoe, that would have interested almost any observer. The fruit of some was of a dull white, of others a waxy white, of others a clear pearl white. The berries of some were as opaque as wax balls, some were so nearly transparent that the seeds were quite as plainly visible as if

they were not really enclosed at all, and there was in the fruit of the thousands of different plants, almost every degree of transparency. In one or two instances, the berries were pyriform. There were also many different sizes in both fruit and foliage, in this general collection.

Making allowances for the possibly different stages of maturity, and the differing vigor of the plants, I could not reconcile the variety of appearance with the idea of only one variety of the mistletoe. It seemed to me that these differences in the specimens justified a conclusion that this parasite varied quite as freely as many fruits and flowers.

Nursery, Texas, July, 1886.

[The facts contributed by our correspondent show how much there is to be learnt about even the commonest things. We are quite sure others in the regions where mistletoe grows, could furnish much that would still be new in relation to this curious plant. It seems almost certain from what has been already brought out by correspondence in our magazine, that the mistletoe has no special favoritism for any plant; and yet there are localities where it is found on a plant which it seems to avoid in others. And the explanation of this seems to be, that it is the circumstances that exist at the time of the maturity or germination of the seed, as they may affect distribution or germination that accounts for these differences. More facts, as to the host plants of the mistletoe in different localities are needed, however, before these and other questions are definitely determined. It would certainly be worth noting whether it has as ever been known to grow on the Live oak. No doubt it does in some localities.—Ed. G. M.]

WILD PLANTS IN NEW JERSEY.

BY F. L. BASSETT.

I noticed in a recent number of the MONTHLY some notes on the number of different species of plants that were found in going a mile in New York in comparison with California, and being curious to see how New Jersey compared with them I counted them on several occasions. The greatest number found was from the little village of Green Bank in Burlington county, one mile along a road across the Mullica river into Atlantic county, where I found two hundred and twenty-seven. On another occasion, in a place with less variety of soil, I found one hundred and ninety-eight. I did not count some plants that had escaped, and I counted ferns and lycopods of which there were six. *Hammonton, N. J., Oct. 7th, 1885.*

WILD FLOWERS AND FRUITS OF CONNECTICUT.

BY MRS. W.

We have spent our summer holiday of seven weeks among the Berkshire Hills where I have been amazed at the immense quantity of fruit in the vicinity of Great Barrington, Hillside, Winstead and Sheffield. The cherry trees along the roads were literally crimson with their weight of fruit, more crimson than green. Currant bushes so red that driving past we inquired of our driver "What those red bushes were?" Plum and pear trees so heavily laden with fruit that their branches sway to the earth. Apples cover the ground around the trees when they fall, and yet the trees are beautiful with their wealth of fruit, golden yellow, crimson cheeked and purplish green.

I was deep in the heart of the mountains high bush cranberries brilliant with their shining berries; but I have found but few wild flowers to reward my research. One single scarlet Lobelia attracted my attention; it grew on a hillock of pebbles and stones; many small red flowers on a pale green stem, the petals lighter in color than usual.

The drawing of the flower I enclose is sent because no one among the farm people here knows its name, though perfectly familiar with it. It grows in great patches in low places among the rocks. I have never found it in our Southern woods.

In Mrs. J. S. R. Thomson's article of September she mentions a plant, or rather shrub, bearing small, sweet scented, star-shaped flowers with

foliage like a whortleberry. I think she alludes to the American *Syrax* of our Southern swamps.

Late of Summerville, S. C.

[The drawing sent represents the "grass of Parnassus," the American representative of the genus *Parnassia*—*P. Caroliniana*. It is found in damp places along the whole of the Atlantic slope of the continent from Canada to Florida. By its name it would seem that Linnæus did not know that it had so high a Northern range. The writer remembers it as abundant along the Niagara near the falls.—Ed. G. M.]

ZEPHYRANTHES ATAMASCO—THE SUWANEELILY.

BY H. NEHLING.

When I traveled in Florida last April, I learned that the people of the Suwanee region call this fine *Amaryllis* the "Suwanee Lily." It grows most luxuriantly on the banks of that far-famed river, and tourists are usually delighted to hear the pretty flowers called by that name. I am inclined to believe that many northern people only know this *Zephyranthes* by the name of "Suwanee Lily." I have seen two forms on the Suwanee—a white one and a rose colored one.

Freistatt, Mo., Aug. 10th, 1886.

PRETTY WILD FLOWERS OF KANSAS.

BY THOMAS BASSLER.

Those of your readers that have been through Kansas, know that we have a good country and a varied flora; but probably not many are aware of how many of our floral beauties are well worth a place in cultivated gardens. I will mention a few found in short botanizing trips in the northern counties, where some bluffs exist, and on these may be found such beauties as *Oenothera Missouriensis* and *speciosa*. The former has large yellow flowers, that are from 3 to 4 inches in diameter; the latter has pure white flowers, that are from 1½ to 2½ inches in diameter, fading to pink. They are very gay. The seed pods of the former are quite large, probably 1 to 1½ inches long, and as broad; but in shape like to ovals put together at right angles. Then the *Callirhoe pedata* is another very brilliant prairie flower; also *Pentstemon cobæa*, *Delphinium azurea* and others. *Catalpa speciosa* is in bloom in this neighborhood, for the second time this year.

Geuda Springs, Kansas, Aug. 23d, 1886.

[The Editor has collected plants in most parts of

Kansas, but has never gathered (*E. speciosa* in the northern part of the State. It is probably its northern limit. It is a very beautiful species, and rare in cultivation. (*E. Missouriensis* is rather common in gardens. The *Callirhoe*, one of the Poppy mallows, is occasionally grown; the whole of them are easily cultivated and as our correspondent says, well deserve it.—Ed. G. M.]

BOTANICAL NAMES AND COMMON NAMES.

BY W. F. BASSETT.

Your correspondent's fierce anathemas against botanical names call to mind an anecdote which I think is to the point and well illustrates the necessity of "speaking English." A physician was called to prescribe for a lad of some ten or twelve years and requested him to show his tongue, which elicited only a vacant stare, and the mother said, "talk English, doctor," and to the lad, "hopen thy goblet and run out thy lalliker."

The fact is, these difficulties of language are all relative or imaginary, and your correspondent's article would be as incomprehensible in some quarters as Latin names are objectionable to him. I well remember my first impressions upon looking through my text book of chemistry. I thought it almost impossible that I could ever master the "unpronounceable" words and terms, but as I advanced, taking one thing at a time, no more trouble or difficulty was experienced than with any of the common branches of study when first taken up, and I do not believe any young man, with energy enough to accomplish anything in life, ever was or ever will be prevented by botanical or scientific names from prosecuting any studies which his tastes and occupation render desirable.

As far as the *Beurre d'Anjou* pear is concerned, its lack of high color has had much more to do with its loss of popularity than its name, and when fruits are displayed for sale it is not necessary that purchasers should call for them by name. And more than this, I venture the assertion that not one in one hundred of those who buy or sell knows the name of the variety he handles.

It is very true that the botanist who freely uses botanical names in conversation in general, is liable not to be comprehended, or thought to be displaying his knowledge, and this is equally true in every science; and not only this, but, as the anecdote at the commencement of this article illustrates, every well educated man who mixes in all grades of society must drop his dictionary words and clip his enunciation, as well as adopt the

provincialisms of those he is talking to, or he will sometimes fail to make his meaning clear or will be credited with a desire to show his superiority.

EDITORIAL NOTES.

INJURY TO RICE BY BIRDS.—The United States Department of Agriculture desires information as to the extent of the injury done to the rice crop by the Bob-o-link, and the Red-winged Blackbird.

THE ENGLISH SPARROW.—The English sparrow, its habits, and general history since it came to this country, is being investigated by the Department of Agriculture, and it would gladly send blanks to be filled to any applicant.

ANTARCTIC EXPLORATIONS.—Attention is again turned towards Antarctic explorations, through an address by Baron Von Muller on the 18th of January last, who points out that by establishing an outpost at Auckland or Macquarie Island, and the expedition aided by steam and electric balloons, the problems connected with polar explorations could, in all probability, be solved.

There seems a chance that the Australian Government will undertake the task.

PRINTING LETTERS ON FRUIT.—Three letters, Y. O. R., were found on a pear, gathered from a *Le Conte* tree on the grounds of Mrs. Homeister, at Thomasville, Georgia. The lady is positive nobody did it. It is certain, however, that with letters cut in a piece of paper, as on a stencil plate, and wrapped round a fruit, the sun will do just that work.

FLOWERS OF FIGS.—The Editor of the *Gardeners' Chronicle* has never seen stamens or male flowers in figs under cultivation in England. In our own country, there are many observers who have never found anything but female flowers on them; but for all that, the Editor of the *GARDENERS' MONTHLY* believes that it is not so rare as is generally supposed. He has seen male flowers, just beneath the orifice in the upper portion of the fig, frequently.

THE CHARLESTON EARTHQUAKE.—Among the curiosities of the phenomena, was the sinking of a piece of land about 8 feet square, on which was a large peach tree growing, which was about 16 feet high. It went down perfectly perpendicular, and the top branches were left just even with the surface.

Scientific men who have been telling us the cause of the earthquake, have distinguished them-

selves by showing how good observers may be shallow generalizers. If the hot ball cooled equally, there could be no contraction of the earth's crust. It would remain an arch, no matter how hollow the inside might be without a crack, though the inner cavity might become more hollow with cooling. There might be a separation of layers during the cooling, and the sudden separation by this contraction might make earth tremors. The unequal cooling might make the surface crack; but this seems not to be taken into account. As water is a better conductor of heat than air, the earth surface under the sea would cool faster than the part exposed to the atmosphere, and this might cause a surface crack. The same law on a larger scale, causes a lamp glass to crack.

SCRAPS AND QUERIES.

FOUR-LEAVED CLOVER.—A New Jersey correspondent writes: "What has gotten over the clovers this season? My daughter found this morning in about three-quarters of an hour 25 four-leaf clovers and 10 with five leaves. Is not this very unusual? Is it probably caused by an excess of vitality arising from the damp season?"

[No one knows why a clover sometimes has four leaflets. The moist season will scarcely account for it, for the four-leaved condition is not more common in the moist climate of England than in America. The fact is, that Nature is, like

other young ladies, not always willing to furnish a reason for what she does. "When she will, she will, and when she won't, she won't," is about as near to a reason for some things as we can get to it.—Ed. G. M.]

BLOOMING OF THE SWEET POTATO.—A correspondent says: "Did you ever see a sweet potato bloom? As largely as we plant them in the South I have never seen but one; I made a picture of it. We had a friend who on one acre of ground made 750 bushels of that very palatable vegetable."

[Never saw it blossom in the open air, but plants grown in pots and kept in a hot-house will bloom toward spring. It is one of the evidences sometimes adduced of the fact that there is a bud variation as well as variation from seed, that the numerous varieties of sweet potato have originated from changes in the roots without plants even blooming.—Ed. G. M.]

THE ODOR OF A LILAC BUD.—"Mrs. T." says: "If you want a most tantalizing suggestion, get you to a lilac in the early spring time while the leaf-buds are still rolled up tightly, tear it open and you'll get the very distinct odor of peaches and cream."

BLUE MOUNTAIN TEA.—A correspondent desires to know whether this tea, made from the sweet-scented golden rod—*Solidago odora*—and which a few years ago was selling readily in Chicago for \$1 per lb. still maintains its popularity there. Can any Chicago friend inform us?

LITERATURE, TRAVELS AND PERSONAL NOTES.

EDITORIAL NOTES.

SILK CULTURE.—The Women's Silk Culture Association was organized in Philadelphia in 1880. Its President, Mrs. Lucas, and the ladies associated with her, have had a world of difficulties to overcome in their efforts to promote this useful industry, and deserve great credit for their perseverance. A much greater measure of success has been theirs than usually falls to the lot of those who endeavor to do good, and they should have the praise their successful perseverance deserves.

It is said that there is an endeavor on the part of some silk manufacturers to crush out the infant

industry, as they fear a tariff on the product of China and Japan may be put on, in order to protect the silk culture of our own country. This rumor can scarcely be well founded, for manufacturers generally find tariffs benefit them quite as much as they benefit the workmen in their employ. If there is really any feeling against American silk, it is probably for some other reason than this. That which is cheaper and better in home goods will surely find buyers over that which is foreign. It might be worth while for those who are interested in American silk culture to find out what is the real reason for the indisposition to buy American silk, if indeed such indisposition really exists. The writer of this was con-

versing not long since with an eminent silk manufacturer, who seemed quite proud of the success of the American silk raisers, and intimated anything else than a disposition not to purchase it.

THE GARDENERS' MONTHLY.—As the season for renewing subscriptions is approaching the publisher expresses a hope that the friends of the work will kindly endeavor to send another subscription with their own. The lovers of intellectual gardening are scattered, and none of the usual methods of advertising for circulation are practicable unless the annual subscription price were greatly increased. In all the long years since the magazine was started it has relied solely on the good will of its friends and the efforts of its agents for increased subscribers and for contributions to its pages. Its great success on this mutual principle may be considered one of the marvels of the age. There are always a few newcomers into the charming walks of gardening who do not know there is a GARDENERS' MONTHLY. Those who employ gardeners could make no handsomer Christmas present than a year's subscription to the magazine.

The plan of giving with our December number a first-class portrait of some eminent living horticultural author as a frontispiece to the volume has proved popular, and adds to the permanent value of the magazine. We have arranged to have for our next the likeness of one of our well-known horticultural editors, and which we are sure no lover of American gardening will care to miss.

TRAVELERS AT HOTELS.—Horticulturists are great travelers. It may interest them to know that an American put up at the Adelphi Hotel at Liverpool, leaving \$2500 in a valise in his room. It seems strange that an American would leave money lying around loose like that, but he said he did. He said he locked the door, and gave the key to the hotel clerk. He said some one opened his valise, stole the money and locked it again. Though there was no evidence but his unsupported word that all these strange events occurred the court decided that the money was stolen from the room, and the hotel company had to point to a printed notice in the room that they would only be liable for \$150. The jury granted the American \$150. It is a striking evidence of how well the word of an American will stand in an English court of justice.

GEORGE B. THOMAS.—Mr. Thomas, of the well-known firm of Hoopes Brothers & Thomas, came

near losing his life by being thrown from his carriage while crossing a railroad track. He was found insensible before the arrival of an approaching train. He is one of those intelligent men who do honor to the nursery trade, and hundreds of our readers will be glad to know that the prospects for his final recovery are good.

EDWARD PYNAERT.—A grand fete was given last month at Ghent, in Belgium, in honor of Prof. Ed. Pynaert, Editor of *Revue d'horticulture Belge*, to commemorate the twenty-fifth anniversary of his election as Professor in the State School of Horticulture. It was a grand affair, and we congratulate our colleague on the well merited honor paid to him.

THE MISSOURI BOTANIC GARDENS.—By one of the visitors to the Florists' Convention it was a pleasure to learn that, notwithstanding advancing years, the generous proprietor, Mr. Henry Shaw, was still enjoying robust health.

He has recently published by the aid of his intelligent gardener, Mr. Gurney, a catalogue of the economic plants growing there, with the uses in the arts and sciences to which they are applied. It fills 53 pages, and is given freely to visitors of others who may want to be instructed as well as pleased by the interesting plants collected there. A large number of extremely rare and yet famous plants are in the collection, the famous Upas tree being among them.

APOLLOS WALCOTT HARRISON.—Following close on the death of the admirable Secretary of the New York Horticultural Society, Pennsylvania meets with a similar loss in the death of Secretary Harrison. He departed but a few weeks before, in excellent health and spirits, to pay a brief visit to his children in Europe, and died of inflammation on his return trip, in his sixty-sixth year. He was among the earlier contributors to our magazine, the many excellent papers under the signature of "Novice," having been from his pen. At the meeting of the Pennsylvania Horticultural Society, held immediately on the receipt of the sad news, Mr. Thomas Meehan, the Corresponding Secretary, paid the following tribute to his memory:

IN MEMORIAM.

Though in the past, the Pennsylvania Horticultural Society has been called upon to record the expression of its losses, it has surely never experienced a greater than by the death of its late Secretary and Treasurer, Apollos Walcott Harrison. For a quarter of a century he had been its brains and moving spirit, punctiliously true to his trusts, making hosts of new friends, and never losing an

old one. He joined the Society on the 16th of October, 1880, entered at once into actual service to aid the Society, and became its Secretary in March, 1861. In December, 1873, he was elected Treasurer also.

He was born at Hartford, Connecticut, and was a descendant of the Harrisons famous in English history, in connection with the struggle of Cromwell against royalty; and on his mother's side with the Walcotts, another old English family with numerous distinguished representatives in the New England States. Previous to the Rebellion, he was one of the leading perfumers of our city, with a very large business all over the Union, but especially in the Southern States. Though with some aid from good schools in his younger days, he was, in a great measure, self-educated. He had a knowledge of Latin, Greek, Italian, French and German languages, chiefly through his own unaided efforts. His chosen profession in early life was a civil engineer, and he assisted in laying out the earliest railroads in Connecticut. He was passionately fond of art, and was among the first, if not the first, to introduce chromo-lithography into this country, employing his own lithographer in connection with the perfumery business. This fondness for his art has been inherited by his sons, they taking rank at present among the most eminent. Besides these, he leaves a married daughter, Mrs. Fulton—also an artist of superior merit. It was returning from a visit to the sons, residing in Europe, that death overtook him. He died on board the British steamer "Queen," on the 22d of August, and after the failure of efforts to preserve his body, was buried at sea on the 23d.

Without ostentation, Mr. Harrison was a quiet but hard worker in numerous benevolent enterprises, public and private, and the excellent services he rendered during the Sanitary Fair and the Centennial, are still greatly remembered by many.

In view of his many virtues, public and private, and as a faint expression of the great loss to this Society, it is, therefore

Resolved, That in the death of its beloved Secretary, the Society mourns one of its most efficient officers and best friends, and unites with his family in sincere sympathy with their distress at the loss of an affectionate father.

DR. HANCE.—This gentleman, who was English Consul at Amoy, in China, did more perhaps than any one in recent times to make the world acquainted with Chinese plants, and many flowers have been named for him. He died in China on the 22d of June.

JOHN STEVENSON.—Only recently did we hear of the death of this excellent landscape gardener, to whom so many of the pretty gardens about Philadelphia are indebted for their landscape beauty. He will be remembered by many horticulturists who visited the Centennial Exposition, as he had charge of the laying out of the grounds of many of the departments of the Exhibition. He

was a native of Scotland, but came to Philadelphia in 1851, following his profession steadily till a few days of his rather sudden death.

TRANSACTIONS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY FOR 1885.—THE ARNOLD ARBORETUM (concluded from page 286).

"The coming year will also witness much progressive work on the Public Park, in the way of planting: mostly of Coniferous trees such as Picea, Abies, Larix and Pinus. These are to be planted in single specimens and groups. Those of the best known utility will be planted for permanent effect, while unknown varieties will be so distributed that, in case they fail or prove unsuitable, they can be removed without defacing or marring the permanent planting; the effect in landscape being also carefully looked after. It is the intention to give the preference to American trees in large groups and single specimens, while native shrubs will be planted as an undergrowth of the larger trees. For this purpose over sixty-two thousand plants were collected last fall, comprising all the best native shrubs in the New England States. Many thousands were planted in the spring of 1885, the most noticeable perhaps being at a point on the right of the entrance to the Arboretum, planted with White pines to correspond with the magnificent Hemlock grove on the opposite side. Within the last five years miles of boundary belts have been planted, comprising all the native trees as far as possible; and a grove of Pinus resinosa (the Red pine), to the number of fifty or sixty, which in ten years will make a fine appearance. This is one of the most beautiful American conifers, and is well deserving of more general cultivation both for ornament and timber. A belt of trees facing the shrub garden is worthy of especial mention as containing many fine specimens over twenty feet high, where eight years ago was a barren side-hill. The trees have certainly made a remarkable growth, and show how many equally unpromising locations might be utilized in a most effective manner.

"There is a small span-roofed greenhouse devoted mainly to propagating trees and shrubs in winter, by grafting, cuttings, and seeds; from ten to fifteen thousand are produced annually. In spring they are placed thickly in boxes, and as soon as established are allowed to harden off in the frame ground. In this ground are several deep pits where the plants are stored for the first winter; every available place is used, and a look into one of the pits a few days ago revealed a surprising quantity of young plants, which will take their places in the nursery rows another season.

"Among the many promising trees our attention was particularly attracted by the following deciduous kinds: Betula alba, several fine forms; B. nigra, B. papyracea; Catalpa bignonioides, C. Kämpferi, C. speciosa; Cladrastis Amurensis; Fraxinus Americana—A remarkably fine form of this species, with beautiful foliage, bright and shining above and glaucous beneath, was especially noticeable; F. Mandshurica, F. potamo-phylla—This and the preceding are from North-

ern Asia and Japan; *Juglans Mandshurica*—This tree was raised from seed eleven years ago, and has borne several crops of fruit; *Phellodendron Amurense*—The Amoor Cork Tree; one of the two original plants raised from seed being pistillate, and the other staminate, seed was perfected; it is believed that this is the first that has been produced in this country. *Prunus Sibirica*, *Quercus Daimio*, *Q. macrocarpa*, *Q. palustris*, *Q. Prinos*, *Q. Robur* (English oak)—Many beautiful forms. *Syringa Japonica*—A very rare species of Lilac from Japan, flowering in the middle of July; the trusses are a foot or more in length and pure white; it is a small tree rather than a shrub. *Rhus* sp.—A beautiful species from Japan. *Magnolia* sp.—A very promising species from Japan, which seems to be more hardy than any we have here. The seeds of this and the two preceding were contributed by President Clark of the Massachusetts Agricultural College. *Pyrus*—There is a fine collection of species from Northern Asia and Japan, which are very beautiful in flower or fruit, such as *spectabilis*, *Toringo* and *baccata*, and their varieties.

"Of the Conifers we may mention: *Abies brachyphylla*, from Japan; *A. concolor*, from Colorado; this is one of the finest specimens in the Arboretum; *A. Fraseri*, *A. balsamea* var. *Hudsonica*; *Chamaecyparis* (*Retinospora*) *obtusata* and *C. pisifera*, and their varieties. There is no doubt that the many varieties of this plant in cultivation came from these two original species. *Juniperus communis aurea*; *Picea alba*—A variety known in the nurseries as Maxwell's Golden Spruce; *P. alba coerulesa*, *P. Engelmannii*, *P. excelsa* and its many varieties; *P. pungens* and its varieties, many of which are very handsome, and being quite hardy promise to become very desirable for general ornamental planting; *Pinus Bungeana*, *P. excelsa*, *P. flexilis*, *P. Jeffreyi*, *P. Murrayana*, *P. parviflora*, *P. ponderosa*, *P. resinosa*, *P. Strobus* and its several forms; *Pseudotsuga Douglasii*, the Douglas Fir or Red Fir of Oregon.

"Among the shrubs were many beautiful varieties from all parts of the world, to give a description of which would take more time than our hurried visit would allow, but we hope to add many notes of the Arboretum collection in the near future. In the meantime, those desiring further information, are referred to the TRANSACTIONS of the Society, Part I, 1881, pp. 83-87, and Part I, 1883, pp. 79-88, as containing a fuller account of many new shrubs introduced at the Arboretum than can be found in print elsewhere.

"The following extract from the Bulletin of the Bussey Institution will be of interest to all, even if the facts are known to some: 'In the spring of 1872, the President and Fellows of Harvard College received a gift of \$100,000 from the trustees under the will of the late James Arnold, merchant, of New Bedford, Mass., for the purpose of establishing at the Bussey Institution, a professorship of tree culture, and creating and maintaining on the Bussey estate an Arboretum, which should ultimately contain, as far as practicable, all the trees, shrubs and herbaceous plants, either indigenous or exotic, which can be raised in the open air at West Rox-

bury. At least two-thirds of the income of the fund is to be accumulated until the fund amounts to at least \$150,000, and the Bussey estate (Woodland Hill), in West Roxbury, passes completely into the hands of the President and Fellows of Harvard College. A particular portion of the estate has been specified as the site of the Arboretum, in the indenture which defines the object and terms of the gift—a portion which contains about one hundred and thirty-seven acres, and is the finest part of the whole estate, as regards the variety of its soils, the beauty and variety of the trees already growing upon it, and the lay of the land. An Arboretum is intended to educate the public, as well as the special students who resort to it. When Woodland Hill comes into the possession of the President and Fellows, the Arnold Arboretum will doubtless be laid out as an open park, with suitable walks and roadways. It can hardly fail to become a beautiful, wholesome and instructive resort, which will be more and more precious as the population grows denser about it.'

"From still another point of view, the Professorship of Arboriculture and the Arboretum are substantial additions to the University. The cultivation and preservation of forests will become, in no long time, a matter of national concern. The natural forests of the country are already rapidly disappearing, and wood and timber, at no distant day, will be scarce and dear commodities, as they have long been in many countries in Europe.

"In April, 1874, Mrs. Moiley conveyed all her life interest in the Bussey estate to the President and Fellows of Harvard College, so that the whole estate is now at their disposal. In 1872, the first seed was planted for the Arboretum; but at that time, and up to the spring of 1879, much of the work, such as the raising of plants, seeds and cuttings done at the Bussey Institution, was for the Botanic Garden at Cambridge, as well as for the exchanges of the Arboretum. Since 1879, the whole time has been devoted to raising plants for the Arboretum; and the number of new and rare plants propagated has rapidly increased.

"In 1875, there were one hundred and twenty-eight species raised. In 1877, Mr. Sargent wrote that, judging from the immense number of letters which were annually sent him, there was a steadily-increasing interest felt in the Arboretum. It was then but five years since its establishment; but its usefulness and influence were already evident, and to its influence could be traced the planting during that year, of nearly half a million trees in the New England States.

"In December, 1882, an arrangement was made with the Park Commissioners of the City of Boston, which, without interfering with the scientific aims of the Arboretum, will increase its local influence by freely opening its collections to the public, and by securing for it additional and greatly-needed land, suitable and dignified approaches, and carriage drives.

"The objects of the Arboretum may be definitely stated in a few brief words, that all can understand. First, a school of Arboriculture for the study of trees and shrubs and their uses for timber for ornament, and otherwise. Second, a museum of

living specimens of all ligneous plants that will stand the climate at West Roxbury, planted and arranged in botanical order. Third, a museum for reference, containing a dried collection of all ligneous plants, properly labelled with the time of flowering, native location, and, if foreign, the country where they are indigenous; also a full collection of specimens of wood, bark, fruit, seeds, etc. Fourth, a library containing all the best works on Dendrology, for the use of students or others interested in the science of tree culture.

"In closing this somewhat lengthy, yet inadequate account of our visit to the Arboretum, we must not omit to say that its success is due to the untiring and indefatigable labors of the Director, Professor Charles S. Sargent, whose large correspondence, and thorough knowledge of all that pertains to the duties of his office, have already given to the horticultural world one of the grandest educational institutions this generation has been blessed with. We sincerely hope he may be as successful in the future as he has been in the past, in the introduction of so many of the most beautiful trees and shrubs to adorn our parks and gardens. We desire also to acknowledge the courtesy and kind attention of Mr. Jackson Dawson, the gardener at the Arboretum, who so generously gave us his time and valuable information which has enabled us to make this report.

"The Committee award to Mr. Dawson a gratuity of \$20 for skilful propagation, and culture of hardy trees and shrubs."

THE MICHIGAN HORTICULTURIST.—This new monthly magazine with its twelfth number changes its name to *American Horticulturist*. Edited by such an intelligent and devoted pomologist as Mr. Charles W. Garfield much was expected of this venture, but it has proved well worthy of Mr. Garfield's reputation, and horticultural literature is to be congratulated in having so able a laborer in the field.

FIRST ANNUAL REPORT OF THE OHIO FORESTRY BUREAU.—From Adolph Leue, Secretary, Columbus, Ohio.

One cannot but admire the disinterested zeal with which so many good people follow the "forestry question," though candor compels one to say little seeming good follows so much hard labor. Here for instance is a good illustra-

tion. Dr. Warder, the father of the American forestry movement, was anxious his own State should do something. Not till last year could the Legislature be induced to do anything when the "Forestry Bureau" became a fact. Three excellent gentlemen, without pay except railroad expenses, are working like beavers, and a Secretary with but three hundred dollars gets up this report of 314 pages. The State printer is the chief gainer, and indeed to our mind the only gainer, for what do we learn after all? The Secretary himself sums up the work: 1st. Ohio, once a forest, has only about 17 per cent. of woodland left—but this surely everybody knew. 2d. That nothing is being done towards preventing the cutting down of what remains—this we also knew. 3d. That the time has come when people should preserve and plant. This also is no news.

The Secretary says that "the difficulty is to convince a legislative body of the necessity of due attention to forestry." That is exactly it. They have charge of the people's money, and should not spend it without knowing what it is to be spent for. The Pennsylvania Legislature has always held itself ready to aid forestry whenever anything practicable has been presented to it, and the only "due necessity" ever presented to it was that parties be exempted from repairing their highways on condition that they planted trees along the highways, to the extent of 25 cents per tree planted, which recommendation the Legislature promptly passed.

There is no recommendation that we see in this long report that any Legislature could take hold of. When the people can see that there is money in tree planting, and that they will be perfectly secure against forest fires, we shall need no further legislation.

DRUGS AND MEDICINES OF NORTH AMERICA.—By J. N. and C. G. Lloyd, Cincinnati. The June number of this excellent serial is devoted to the Magnoliaceæ; and the tulip tree, as one of the order, is exhaustively treated, as well as its neighbors, the true magnolias.

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

PENNSYLVANIA HORTICULTURAL SOCIETY.—The Florists' Convention was held in the Hall of the Horticultural Society, on Broad Street, the

use of which was freely tendered by the latter body.

At the last meeting a letter was read from Mr. Krelage, of Haarlem, thanking the Society for the honor of honorary membership.

THE EXHIBITION.

The sudden death of Secretary Harrison but a few weeks before the exhibition threatened to throw everything into confusion; but the horticulturists of Philadelphia seemed so impressed by his loss as to make unusual efforts to carry out the work the late Secretary loved so well, and the result was one of the best exhibitions held for a long time. It was an excellent tribute to his memory, and one which he himself would have loved had he a choice of tributes under the sad circumstances. So full was the exhibit, that it would take the half of our magazine to do full justice. We can only make such notes as we think will interest our readers everywhere, those of more local interest having already been given in the local papers.

Cut-flower Work.—These seem to be the great attractions with the multitude. We hardly know how it is possible for the judges to give satisfaction. The premiums are for the "best design," and just what this means is indefinite. Hugh Graham & Co. had an exact copy of the "old stone mill at Newport," for which a special premium was awarded. The walls were made of *Hydrangea paniculata*, which gave an excellent representation of stone, while lines of *Asparagus tenuissimus* gave just the representation of moss in the mortar crevices. At a little distance the representation was perfect, and it certainly made the large hall in which it was, a central figure. If the premium had been for the "best design for the ornamentation of a large hall," it deserved a first premium. La Roche & Stahl had first premium for a design which we should judge adapted to dinner table decoration. It was simply curving wires from about a 3-foot base, terminating in a shallow vase of about a foot over, for flowers. At a distance it had the outline of an inverted goblet. All the flowers used to decorate the wires and fill the vase were dark, except a few *Niphetos* roses. The second premium went to Eisele Brothers. This was an old-fashioned eight-day clock, and would be very appropriate at a golden wedding. In funeral designs, Craig & Bro. had a "cross and crown;" these seemed to be made up wholly of white carnations, white tuberose, and yellow and white roses; but the whole was rendered very effective by a background or wall of English ivy leaves. A small design, but which called forth much admiration from visitors, was from Anne K. Bissett; it was the "Rock of Ages." There was a large pyramidal rock of greenish material, with a cross of pure white flowers; but twined around and hanging over

the cross, was a wreath formed of bright colors, such as are rarely seen in funeral designs. There was the cold and cheerless cross, with the brighter hopes of the Christian exemplified in the warmer colors clinging to it. The hidden meaning of funeral emblems is so often obscure, that Miss Bissett received great praise for this clever expression of a happy thought.

Cut Garden Flowers.—A great improvement on the old style of *Petunias*, are the new double-fringed edge kinds. Mr. H. A. Dreer had a first premium for a fine lot of these. He had also a special premium for *Verbenas*, which it is praise to say were as fine as they used to be in the halcyon days of this famous flower. He had also geraniums, roses, cannas; and Craig Bros. had roses and verbenas. Kreinberg had a collection of pansies so large for September flowers, that there were many "wonder how he does it?" expressed. The flowers were exhibited in glasses, and a frond of the Christmas fern behind each bunch of flowers, showed the exhibitor to have that true taste which the genuine florist should possess.

Aquatics.—There were hosts of admirers around the water tanks of E. D. Sturtevant, of Bordentown, New Jersey. His flowers drew hundreds to see the exhibition. He has succeeded in naturalizing the famous Egyptian Lotus, and he had scores of their beautiful red blossoms, with numerous parasol-like leaves on stalks 5 or 6 feet long, giving one an excellent idea of the appearance of ancient Nile. Our own native yellow species bore it company; and there was a variety from Japan, with white flowers, but with a border of crimson at the edge of the petals. The celebrated *Victoria regia* occupied another tank, with a leaf between 5 and 6 feet across. A number of the blossoms were also there; but on this occasion, Egypt with her Lotus, bore away the palm of popular applause from the queen of the Amazon. Two *Sagittarias*—one single, with a dark spot at base, *S. Montvidiensis*, and one a double form of the common wild one, attracted the attention of the curious.

Pot Plants.—These were fully up to the cultural attainments of last year, and the species of plants exhibited had little that was novel. Mr. Dreer's *gloxinias* were very attractive. He had several hundred in 3 and 4-inch pots, and no two were quite alike. The spotted forms were much admired. For summer culture under glass, there are few things more desirable. A huge *Maranta zebra* by John Hughes, gardener to Mr. Geo. W. Childs, must have been about 8 feet high by as

much wide, including the tub it was grown in. He also had a specimen of that graceful palm, *Areca Verschaffeltii*, that was about 6 feet high.

Mr. Warne, gardener to Clarence H. Clark, Esq., one of our best plant growers, among many specimens that showed excellent handling, had a *Caladium Chantini*, growing in a 14-inch pan, that had about seventy-five leaves on it. Mr. Warne had also in bloom a plant of *Anthurium crystallinum* which had eight leaves, each about 1 foot by 18 inches. Dark green, with greenish-white veins. The plant is attractive, but the flowers are no great shakes. An Australian tree fern, *Dicksonia Australis*, with a trunk about 3 feet high and fronds about 3 feet long, was as handsome to our mind as the 10-foot-tall plants we read about.

Tree ferns are always attractive curiosities, and a *Blechnum Brasiliensis* in the collection of Mr. Nesbit, gardener to Mrs. D. Jayne, came in for a good share of popular notice. Its stem was about 2 feet high. A queer but rather ornamental foliage plant with square stems and mottled pinky leaves in this collection, called *Campylobotrys Ghiesbreghtiana*, was attractive. Ferns are always out in full force now-a-days. Mr. Chas. Ball had a nice collection, not so large and well grown as some in the first premium collection, but they were of uniform size—in pans about 16x8 inches deep and the plants about 2x2 feet. Mr. W. Joyce, who together with Mr. A. Warne, are famous for their superior growth of *Caladiums*, had some striking specimens of some things we have noticed before. There was an *Anthurium leuconeurum*, an aroid about 3 feet by 3 and green instead of yellow nerves. There was a pretty specimen of the nearly hardy *Chusan* palm, *Chæmarops Fortunei*, bushy and about 3x3 feet. The rather new Stag's Horn fern, *Platycerium Hillii*, dark green instead of gray as in the common form, and among palms the singular *Caryota urens*, having its fronds cut up into small segments like green wings of butterflies. In this collection also was a specimen of the curious and celebrated Thief palm, *Phœnicophorium Seychellarum*. The stems and stalks of the fronds are covered with reddish black spines, while the broad recurved frond is not much unlike a green plaited Japan parasol. Several growers had this rare palm. The Fergussons' collections were rich in *Dracænas* and *Crotons*. To us one of the best novelties was *Dracæna Lindenii*. There was more of yellowish-green than usual in this family, which have been in the popular kinds running mostly into rose and brown tints. They also had a rather

uncommon aroid, *Anthurium Sanderi*. The leaves were glossy green, and the veins white, with a sagittate form like some others, but the edges of the leaves were deeply crenate. Among the curious plants in Mr. Dreer's collection, *Aralia Kerchovæana*, was striking from the deeply toothed lobes of the palmate leaves, resembling the leaves of a sweet chestnut. The variegated fig, *Ficus Parnelli*, and the Majestic *Melastome Cyanophyllum magnificum*, were in many collections, but were particularly attractive in the collection of Eisele Brothers. Craig Brothers, besides the small pot ferns which were very grateful in their numerous varieties to those who for want of room could do no more than admire the huge specimens of the roomy growers, had also a collection of China Asters, showing how much they have been improved of late. Among them was a rich carmine tint which is rare yet. The speckled and quilled forms were in great variety.

Fruits.—These were scarcer than in former years. Messrs. Alburger Bros. had some remarkably fine pears without the least speck of fungus on the skin, very unusual for Philadelphia growth; and Ellwood Johnson, of Germantown, had Seckel pears that were of enormous size—12 inches round. Fergusson Brothers had numerous varieties of hot-house grapes.

Cacti.—One of the greatest "cards" in the attractions of the exhibition was an immense collection of Cacti from Mr. Blanc. He is receiving the thanks of numerous lovers of these curious plants, and, we may say, beautiful flowers, for the close attention he is giving to introducing and propagating them.

Florists' Supplies.—Kift & Sons maintain their reputation for introducing many tasteful articles of parlor and conservatory utility in connection with cut flowers, and the growth of living plants; and Craig Bros. had much in the same line.

NOTES AT THE FLORISTS' CONVENTION.—*Victoria regia*.—The variety exhibited by Mr. Sturtevant was wholly new. When the flower opens for the second time it is much more dark and brilliant than the older one.

Red Water Lily.—The red variety of the sweet water lily, as exhibited by Mr. Sturtevant, had much smaller flowers than those of the normal *Nymphaea odorata*. Some acute botanist might look after distinct specific characters.

Hot Water and Steam.—There was an animated discussion as to the relative advantages of steam and hot water. No final conclusion was reached.

The Old fashioned Flues.—There were florists at Philadelphia who still contend that more money can be made in a given time from houses with well constructed flues than with the best modern contrivances with hot water or steam.

Old Patriarchs Present.—It did the 'convention good to have with them S. S. Jackson, of Cincinnati, and Isaac Buchanan, of New York, both we believe having passed three score and ten, but both with the enthusiasm for the profession that distinguished them in the olden time.

Cocoanuts in Florida.—G. T. Field, of Monmouth county, New Jersey, speaks in glowing terms of the prospects for success of cocoanut culture along the coast of Florida. All reports favor Mr. Field's enthusiasm. There can be no doubt, we think, that cocoanut culture is to be one of the profitable investments in this remarkable State. They bear in ten years, and yield from 100 to 200 nuts annually.

Fumigating Greenhouses.—Among the implements of gardening exhibited, the Excelsior fumigator of Hermann Perlich for fumigating greenhouses attracted some attention. So far as we can see it still continues ahead of any similar contrivance, and it renders easy what has hitherto been one of the most disagreeable duties of the gardener.

Floral Designs.—It was noted at the Florists' Convention that some of the very best effects produced were those in which no other flowers than yellow roses, Maiden Hair ferns, and Lily of the Valley were produced. Those versed in the art of beauty pronounce this combination perfect.

The Victoria regia.—Sturtevant's flowers of the noble Victoria still reminded the observer of 'Mr. Caleb Cope's prediction, when flowering the plant first in this country thirty-five years ago, that there could not be any handsomer present to a bride than one of these gorgeous blossoms.

Officers of the American Florists for 1886-7.—President, Robert Craig; Vice President, J. C. Vaughan; Secretary, Edwin Lonsdale; Treasurer, Myron A. Hunt. Place of next meeting, Chicago.

Origin of Hybrid Perpetual Roses.—Mr. John Henderson told how the old June rose, or Hybrid China, was crossed with the Bourbon, and this gave them their semi-perpetual blooming character.

Passing Away. Thomas Meehan, detected by President Thorpe in the audience, was invited to the platform. He referred to the sea of young faces before him, which indicated that though varieties might wear out, and individual florists

wear out and pass away, the love of flowers abideth forever. It was a love that never died.

James Hendricks.—Among the ready-witted intelligent speakers who gave life to the Convention, was James Hendricks, of Albany, New York. As he evidently had grown gray in the service, there were many inquiries as to where he had been keeping himself these many years.

Flower and Tree Pedlars.—President Thorpe thought that the few common and yet high-priced things introduced by the itinerant pedlars, do good in the long run. They take floral light into dark corners; and though it be but a rush light, it awakens a desire for brighter things.

An Old Florist.—Peter Henderson was employed by the late Robert Buist in 1844. He says there are eight hundred florists now in America.

Women Florists.—There were many women among the successful florists who invaded Philadelphia. Our correspondent, Mrs. Thomson, of South Carolina, was among them.

New Rose, Geo. W. Childs.—After Mr. Meehan's address of welcome, and Mr. Hendricks' warm response the audience became very enthusiastic in praise of their generous host, Mr. Childs, and amidst shouts of "he shall be our next President," Col. Fitzgerald, Editor of the Philadelphia *Item*, made an eloquent address, in which he suggested that they need not wait for that, but if anyone raised a very beautiful rose or other flower next year, it might be called the "G. W. Childs."

Florists at the Seaside.—All the wisdom in the world does not come out while sitting in a convention. The day spent in going and coming to the seashore, was regarded as one of the most profitable of the whole. There was a special train containing over 600. Those who wanted to learn passed around among the party, gathering information from scores of modest persons, who could never be induced to speak right out in meeting.

W. R. Smith.—It was a great pleasure to numbers of his old friends, to have the Superintendent of the United States Botanic Garden once more among them, after having read his obituary in the Washington papers last spring. He seems to have entered from his narrow escape on a new lease of life and vigor.

Bulbergias.—Designs formed of living plants are now in much demand for parlor and table decoration. Mr. Charles Fox exhibited in bloom, a plant of *Bulbergia rosea*. It is allied to the pine-apple family, and works in beautifully with artificial work.

Garden Sash.—Joseph Plenty exhibited the method he is introducing, and which we explained in our last magazine, for glazing without putty. The West Philadelphia Iron Greenhouse Company exhibited some of their work; and a model of one of Mr. May's greenhouses attracted much attention.

Hail.—The florists discussed in one morning various methods of insurance against hail, and it was thought something feasible would grow out of the discussion.

Old-time Florists.—Mr. Peter Henderson gave some highly interesting reminiscences of the florists of the past. He modestly said little of his own work. Few men have done more in our country to make flower culture so general as he.

Tuberous Begonias.—Mr. Dreer exhibited a fine collection of these very good bedding plants. They are still confined to red and carmine colors.

The City of Homes.—Mayor Smith, in welcoming the florists, referred to the fact that there were more people owning homes of their own in Philadelphia than in any other city of the world; they had therefore more interest in ornamenting their grounds than in cities where most of the people were simply tenants. In this way he accounted for the general diffusion of pretty gardens which so much attracted the attention of visitors.

Sales of Bedding Plants.—Artisans are great buyers of these. President Thorp said that sales were much interfered with through the labor troubles of last spring.

Displays of Roses.—Dingee & Conard Co. made an exhibit of an immense number of varieties, and the manager of the company, Antoine Mintzer, gave a list of those which in the firm's experience they had found the best kinds to grow.

Hydrangeas.—These are almost indispensable to the florist for work that is to keep some time without fading readily, and they make excellent pot and tub flowers. Mr. Warne, gardener to Clarence H. Clark, had some fine blue ones on exhibition. It is remarkable that no one has been able to get the secret of obtaining blue Hydrangeas, though Mr. Warne thinks iron does it. Nature in this is like the old saying about some ladies—when she will she will, and when she won't she won't, and there's an end on't.

Rose Culture.—Mr. Craig's essay was regarded as one of the most valuable in the convention, yet it provoked a discussion, in which it was evident no general conclusion could be reached on the cause and cure of fungus attacks.

Old and new Roses.—Among these the strong-

est recommended were very old kinds, which led Mr. Meehan to remark that wearing out of varieties did not seem to apply to the rose.

Lilacs in August.—It was a great treat to see White Lilacs in bloom in August, but it was still surprising to note that they were from small stocky plants in 5 and 6-inch pots. Just how this was all done Ernest Asmus, of Mine Hill, Long Island, has the secret. Some florists wondered how it would pay to take all this trouble to retard plants till August, when there were plenty of sweet white flowers blooming naturally at this season.

Hot Water and Steam. After a long discussion between the champions of each method it was considered a drawn battle.

French China Asters.—Denys Zirngiebel exhibited some very dwarf asters that were also very prolific, and the florists seemed to regard them with great favor for summer blooming.

Agave Victoria regina.—In Mr. Blanc's collection was a plant of this remarkably beautiful agave. It is of a very compact growth, and the broad white edges to the leaves give it a very peculiar appearance.

Cattleyas for cut flowers.—Orchids are very much in demand for the more expensive styles of cut flower work. Seibrecht & Wadley, of New Rochelle, had a collection showing how deservedly this class may be prized.

Heat in Philadelphia.—It so happens that when some conventions have been held in Philadelphia, there has been a "hot wave" over the whole country; but the conventionists declare the place they meet in, to be the "hottest place in the Union." When the Florists met in Philadelphia, recently, they pronounced it the coolest place in the Union. Let the Texans take heart. They may yet get the convention there.

The Reception at Mr. Childs.—One thousand one hundred of the florists and their friends, were entertained by Mr. Childs, at his beautiful grounds at Wootton. When the party had assembled in the woods near the house, Mr. Childs was loudly called for. He asked Mr. Meehan to respond for him, which he did, and Mr. Hendricks, of Albany, responded ably on behalf of the florists. Many have expressed a desire to have these two speeches preserved, as well as the printed addresses. We asked Mr. Meehan and Mr. Hendricks, if they would write them out for our readers as far as they could be remembered. Mr. Meehan has endeavored to do so, but Mr. Hendricks replies that he does not like to trust his memory. We en-

deavored to get, at Mr. Hendricks' suggestion, the stenographer's report; but he properly replies that that report was paid for by the Florists' Society, and it would be injustice to other magazines, to give his work to any florists' paper, in advance of its appearance in the published transactions of the Association.

Mr. Meehan said:

Ladies and gentlemen of the Society of American Florists, and of the Florists' Club of Philadelphia:

I have had the honor placed on me by my friend, Mr. Childs, to express to you in his name, the pleasure he experiences in having the company of so large a number of the florists of the United States, and their friends, present with him to-day, and to welcome them, one and all to—if I were not speaking for him, I should certainly say—these beautiful grounds.

It was, ladies and gentlemen, a happy thought that led you to select Philadelphia for this, the earliest of your meetings after the birth of your society, for this convention; for everything horticultural born in Philadelphia, has had a good measure of renown. The most famous botanic garden to-day of America, the first founded by an American, Bartram, was established in Philadelphia; the earliest and still existing Horticultural Society is in Philadelphia; and, if I may be pardoned, that I for once in my life refer to my own work, the oldest existing horticultural magazine in our country is in Philadelphia. Surely, your meeting here will be an augury of long life and usefulness. You will never regret that you held your meeting here; and it is the earnest hope of the proprietor of these grounds, that your stay shall be so pleasant that you may never forget that you did come.

The citizens of this city of Brotherly Love never forget the duty they owe to the earnest florists, who have gone on before. I do not hesitate to say, that one-half the pleasure Philadelphians enjoy, is, in some way or other, connected with Park, gardens or flowers. They owe immensely to your art. Do not then be surprised that they welcome you so warmly to their hearths and their homes. I will, at least, say for the proprietor of Wootton, what I know to be the fact—that a large portion of his life-enjoyment comes from his love for flowers and for gardening, which it is your peculiar mission to encourage and to aid; and that the welcome he tenders you to-day, is, in a measure, the response of his warm heart in gratefulness to the pleasure floriculture has accorded him.

Somehow, it is strange that a love of gardening unites men and women in the bonds of brotherly love, to an extent that no other pursuit seems to do. The standing sarcasm, that two of a trade never agree, is not true of the florist. Yet I am reminded, that if Grecian legend tells true, it was not always so; for a very sad event happened at the time the cut-flower business was first inaugurated. It was, of course, many thousands of years ago, and the business was founded by a woman. Glyzera was her name. 'Twas she who first

wrought flowers into garlands, with which the ancients crowned the heads of the victors in the Parthian games.

It may have been gallantry that prevented the young men of the early times from competing, but she in the innocence of her young heart understood that no one could possibly equal the make up of her work. Certain it is that she enjoyed a monopoly of the cut-flower trade. But there came along a youth from Byzantium. I believe his father must have been the parent of the modern Yankee, for this son did not need to learn a trade. To see that something had been done was enough for him to do it again. He made garlands. The poets patronized him. Glyzera grew jealous. Now just here I want to say I am convinced the story must be a myth. There are hundreds of young ladies in the cut-flower trade just as handsome and popular as Glyzera ever was, but who ever heard of one getting jealous? But jealous we are told she was, and that she gave out that this fellow, Lychnis—that was his name—was just no man at all. Now Glyzera had a lover—this part of the story may be true, for all cut-flower ladies have hosts of them—his name was Satyrion. What Glyzera said to him about poor Lychnis the world never knew, but Lychnis was found dead—dead by Satyrion's hand, and for yards around the thirsty earth had drank in the young garland-maker's blood. The poets cried to the Gods for vengeance, and Apollo made from this blood to spring the Carnation or Florists' Pink. How good comes from evil! From this sad tragedy arose a flower which in sweetness and light airy elegance almost rivalled the rose! And what a punishment for the unfortunate Glyzera! To know and to feel that every carnation flower that she used was part of the life-blood of one she had in life despoised. With such a terrible lesson as this at the first beginning on earth of their business, no wonder brotherly love prevails to the pleasant extent it does. The outside world will not ask why it is that the proprietor of these beautiful grounds offers you the cordial welcome he desires to do to-day. They will simply note that flower lovers everywhere love one another.

Ladies and gentlemen, let me again say on behalf of Mr. Childs, that he feels sure that the hearty welcome everywhere extended to you by so many of his fellow-citizens in the city of Brotherly Love will be long remembered by you, and he ventures to hope that when in the distant future you look back in review of the week's experience, your visit to him at Wootton may have a pleasant place in the happy scene.

THE CHRYSANTHEMUM SHOW OF THE PENNSYLVANIA SOCIETY.—This will be held on the 9th, 10th, 11th and 12th of November, and promises to be one of the greatest exhibitions ever seen in Philadelphia; great efforts are being made by the best growers to have something nice.

NEW YORK CHRYSANTHEMUM SHOW.—This will be held on the 2d of November and following days, at Cosmopolitan Hall, 41st and Broadway. Mr. John Thorpe is Secretary for the time being, in place of James Y. Murkland, deceased.

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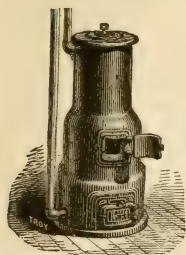
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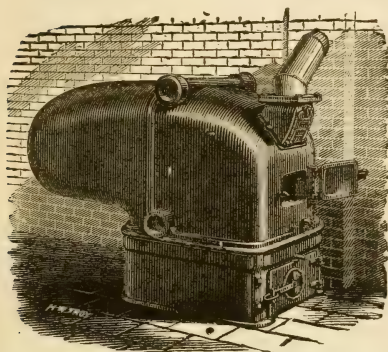


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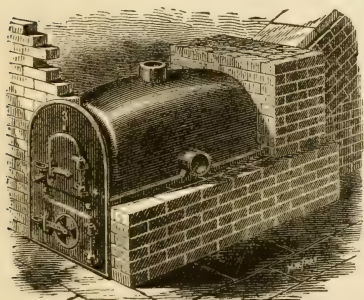
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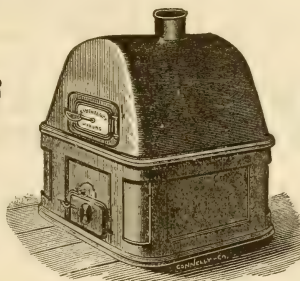


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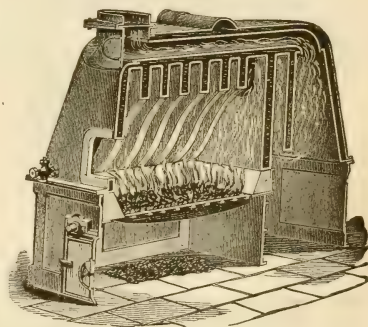
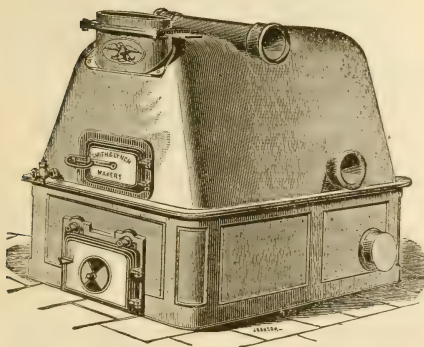


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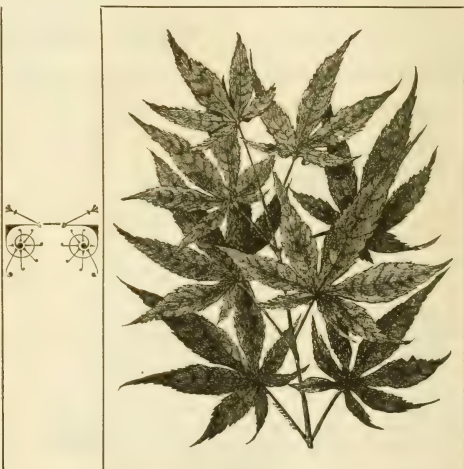
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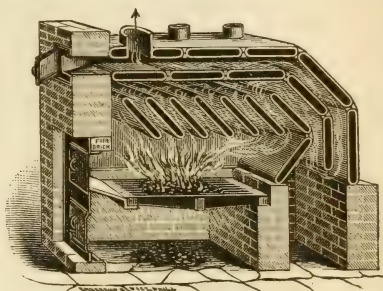
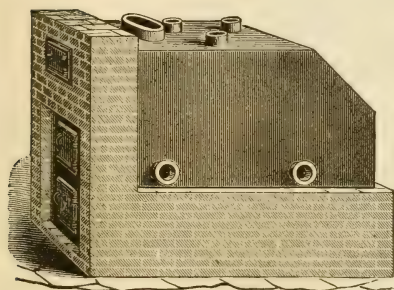
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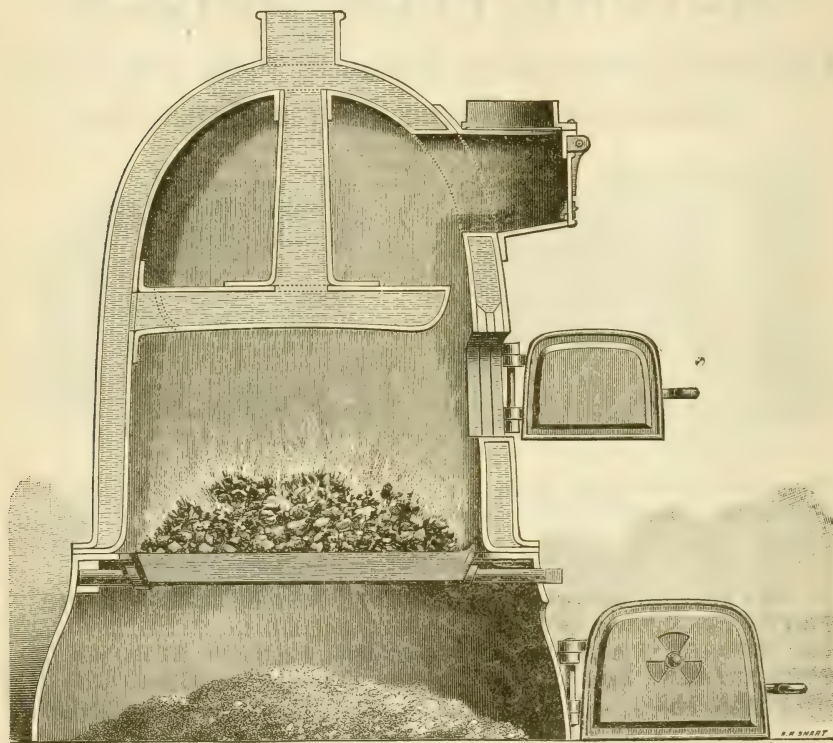
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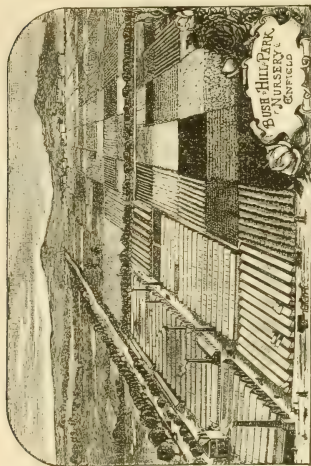
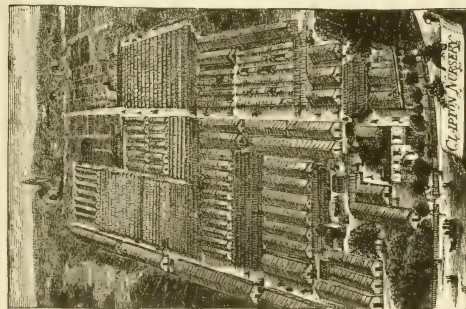
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Address, CHAS. H. MAROT, 814 Chestnut St., Phila.

suffer first; and the weakest from poverty in food or drink are always at the upper portion of the trees or extreme ends of the branches.

Wherever it is practicable to do so, our trees as well as our garden crops, should have a top dressing of compost manure, or fertilizers. If this cannot be done, some relief may come from thinning out the trees, so as to have less mouths in the shape of roots striving for a share of the food.

the leaves were firm enough to gather food from the atmosphere, the roots get strength to put out again.

At any rate our readers know that it is no use to cut down noxious vines at this season. Wait till they are sprouting in spring. They may possibly make a feeble attempt at sprouting a second time, but a second "disbudding" in this way will be certain death.

It is wonderful how much labor and



Residence of N. P. Baily, Fordham-on-Hudson, N. Y.

Park Commissioners, to destroy the vines that poisoned so many visitors. But it was found that the more they chopped at them the more they grew,—and for the hundreds of dollars spent, thousands of new vines sprung up. The excellent gentlemen forming the commission did not know that the plants should be cut just at the time the young leaves were forming. If not cut before

money is lost in gardening for want of a little thought. Not long since we found several men at work in a garden with hammers, drill and fuse, to blow to pieces and remove a large boulder in the way of a lawn. Two men for half a day would have dug a hole near deep enough to bury the rock two feet below the surface. The same with stumps; it is often much easier to bury them than to haul them long distances away. But the skilful gardener would have added more rocks to the boulder and made a rock garden, or gather the stumps into some special piece of attractive work. When the suggestion was made to the gardener in the case of the rock blowing, the reply came that it was not the spot for a rock garden. But the removal of a walk to another place, or the planting of a few belts of shrubs, would have made the spot appropriate, indeed just the very thing for one of the grandest effects in correct landscape gardening.

True garden taste indeed is more exemplified in the saving of money and labor, by adapting our circumstances to true art, than in expending thousands of dollars in making one's grounds the exact copy of some pretty place that is popular elsewhere.

In all garden art it should be the endeavor to make a gradual transition between that which is evidently artificial and that which we would have look wholly natural. Our gardener friend above referred to was quite right in his view that a piece of rock work, which is only pretty when very natural, is wholly out of place on a neatly mown artificial looking lawn. Yet we see this incongruity in gardens with considerable pretensions to taste. As an illustration of good taste we give herewith a view of the country house and surroundings of N. P. Baily, Fordham-on-Hudson, N. Y. The artificial looking *Echeverias*, *Sedums* and *Stone-crops* in the last picture, and the regularly placed Norway spruces in the first, are just the things to make the transition scenes between nature and art, and the employment of large shells, vases, rustic work, or anything of this character, helps largely to ease off the artificial lines.

COMMUNICATIONS.

ABELIA RUPERTRIS.

BY D. H. WATSON.

In Henderson's "Hand Book of Plants" he describes *Abelia* as a small genus of greenhouse plants bearing rose-colored or dark crimson flowers, and that *Abelia rupertris* flowers profusely in autumn and winter. In our grounds the *Abelia rupertris* is a hardy evergreen; it withstood the severe cold of last winter without any injury at all; it also stands our severe droughts with impunity. The color of the flowers is pure white, and it blooms profusely and continuously during the entire summer and autumn. It is one of our most desirable flowering evergreens for our dry summer season.

Brenham, Texas.

FLORAL TASTE.

RY VALENTIN BURGEVIN.

It is gratifying to note how the taste for floriculture has developed and is increasing from year to year and becoming universal. Therefore a few words of encouragement and advice will not be out of place and may help to stimulate horticultural excellence more and more. From wealthy gentlemen's pleasure grounds down to a laborer's

modest home, flowers are planted, and often afford great delight. Of course where professional gardeners have charge of grounds and have sufficient room under glass where plants can be raised, prepared and fully established by planting time, about the middle of May, the grounds are beautiful from the start; but where plants have to be bought, and florists are forced on account of the large competition to sell them for two or three cents a piece, then plants are small and often have a hard struggle for life, and likely one-half of them perish or make a poor appearance up to the month of August, especially if on high, cold ground. If the weather be damp and cool, as we have had it this season, or a drought sets in, the poor plants have no color or shape, and such flower beds are an eye-sore instead of an ornament. It would be a great deal better if they were sodded over. A few good flower beds will, undoubtedly, give more satisfaction than ever so many poor ones. For those who cannot conveniently raise indoor plants suitable for planting it would be better to choose hardy plants which stand the winter and are an ornament as soon as vegetation starts, such as *Ægopodium podagraria* fol. variegatum, the variegated Goat-foot; *Cineraria stelleriana*, *Vinca variegata*, both large and small leaved; the small constant Ribbon-grass, *Euonymus repens*, *Santolina*, variegated Thyme or Golden Feather.

The first named is, likely, the very best and most reliable if properly set out, which is done by planting two to three small roots about every 3 inches in parallel lines with the grass border 6 inches off. By removing the coarsest and imperfect leaves from time to time it will make a beautiful border. The second year the spade needs to be run down on each side to stop the plants from running out of their places. It stands clipping, and new leaves start all summer. Plants from 5-inch pots are the cheapest in the end. Geraniums are probably the most reliable plants to fill out the middle space. Such flower beds will repay one's work in affording pleasure the whole season. Long beds near to paths or roads on a curve or gentle bend will not fail to produce a striking effect. Broad strips of *Alternanthera paronychoides* major on both sides nearest to the grass border, a single row of *Cuphea hyssopifolia* next, and a broad strip of *Coleus Golden Bedder* in the centre are, for those who have the facility to procure suitable plants at planting time, of the best they can choose. On a lawn large plants of *Agaves*, *Yuccas* or *Dracænas* properly distributed

are indispensable. Vases and tubs skilfully planted and set between large beds of all forms, and a fountain near centre, will materially add to the attractions. There are three things absolutely necessary to procure good flower beds, viz.: very rich earth, established plants and skilful planting. But ingenuity is the keystone of all operations.

Kingston, N. Y.

QUEEN OF THE WEST GERANIUM.

BY ERNEST WALKER.

Considering all the qualities that unite to constitute a good geranium, one of the best, as well as most popular of this portion of the country is the Queen of the West. It is an old variety, but time has only established its merit, and in Western catalogues it holds a place as one of the best of bedding geraniums. Its rival is the Madame Rompen, but both varieties are distinct in color and habit, both have the great desideratum of being remarkably abundant bloomers, and in both varieties the individual flowers or florets are rather small and irregular in form, which, however, is only to be expected in these great bloomers. The Queen is of strong, robust, tall habit, while the Madame Rompen is dwarf, so that while both are justly prized, each has its individual merits and adaptations.

Mr. Rompen, of Louisville, claims to be the originator of Madame Rompen, while the Queen was raised by Mr. S. S. Jackson, at Cincinnati, O., in 1869. It is the best, and with the exception of Gen. Sheridan, is the only survivor of a set of seven varieties, which Mr. J. says, are the "choice of fourteen hundred hybridized seedlings which excited the admiration of all who have seen them the past two years;" and in form, color and habit, they were pronounced the "finest yet introduced," by a number of prominent florists, who were among those who saw them. I am pleased to note this, for one of the first things I want to know on seeing a good fruit or flower is, who is its originator; and these facts concerning the Queen I had not known till a few weeks ago; and besides, as it is an honor to contribute something to the genuine literature of a nation, so it is an honor to him who has added one gem, or one new charm, to the treasures of the garden.

Mr. Jackson still resides in a beautiful home near Cincinnati. The snow of years has settled on his head, and he is one of Cincinnati's most respected citizens. While honored there, the geranium he has given the lovers of flowers, has

spread his honor throughout the West; and long after he has passed away, there will be a flower—the Queen of the West—still blooming to his memory. *New Albany, Ind., Sept. 6th, 1886.*

THE BEST NEW ROSES TO BE SENT OUT IN FRANCE, NOVEMBER 1st, 1886.

BY JEAN SISLEY.

Tea, Viviani Morel (Bernaix).—Flowers large, dark cherry red, slightly yellowish, lighter in the centre when expanded. New shade. Very free bloomer, fine trusses.

T., Madame Scipion Cochet (Bernaix).—Flowers large, solitary; in buds, yellowish pink, when expanded, fleshy rose, centre rosy yellow. Very free bloomer. Very fine for cut blooms.

T., Docteur Grill (Bonnaire).—Flowers medium size, large fine clusters, vivid yellow, centre light orange, shaded pink. Fine scent, free bloomer.

T., Attraction (Dubreuil).—Flowers medium size, full, petals slightly crinkled; very vivid rose, darker in the centre; trusses of 5 and 6 blooms. Very free bloomer, fine scent. Plants dwarf.

T., Duchesse de Bragance (Dubreuil).—Flowers full, very good shape, size of Persian yellow, beautiful sulphur yellow; plants vigorous; extra free bloomer; fine scent. Very pretty.

T., Baronne de Fouvville (Gonod).—Flowers medium size, panicles of 3 to 5 blooms in spring, and solitary in autumn; fine in buds; light rose, slightly yellowish. Plants dwarf, but vigorous.

T., Luciole (Guillot).—Flowers large, fine shape; vivid rose, tainted yellowish. Vigorous, free bloomer; fine scent.

T., Mademoiselle Elizabeth de Grammont (Levet).—Flowers large, full, fine shape; vivid rose, centre yellowish. Vigorous, free bloomer.

T., Madam Honoré Defresne (Levet).—Flowers large, very fine shape, fine dark yellow; vigorous, free bloomer. Extra fine.

Hybrid Remontant, Stephanie Charretton (Gonod).—Flowers large, fine shape, full; centre, vivid rose, and edged lighter and whitish. Vigorous; panicles of 5 to 6 blooms, sometimes solitary.

H. R., Louis Rollet (Gonod).—Flowers large, good shape, like Baronne de Rothschild; foliage very dark; very dark cherry red; panicles of 3 or 4 blooms, sometimes solitary.

H. R., Madame Desir (Pernet).—Flowers medium size, beautiful globular shape like that of Centifolia; very full, solitary, dark vivid rose; fine scent; fine for cut blooms.

H. R., Orgueil de Lyon (Besson). Flowers medium size, nearly full; good shape, dark crimson, shaded lighter; very free bloomers; very fine, and handsome for cut blooms.

H. R., Docteur Antonin Joly (Besson). Flowers large, solitary, very fine globular shape, like *Baronne de Rothschild*, but much fuller. Very bright rose, slightly shaded yellowish. Strong grower and free bloomer. Extra fine.

H. R., Madame Bois (Levet). Flowers very large, fine shape; fine delicate rose. Vigorous and free bloomer; first rate for cut blooms.

H. Tea, Madame Joseph Desbois (Guillot). Flowers very large, full, fine shape, rosy white, centre yellowish. Free bloomer.

Ile Bourbon, Madame Chevallier (Pernet). Flowers medium size, fine, large panicles; abundant bloomer, very fine buds; dark lilac pink rose.

Monplaisir, Lyons, France.

[Since this—sent to us in MS. by the author—was in type, we note that it has already appeared in another magazine, and its appearance here without credit, will expose us to the charge of having stolen it from our contemporary. We very much regret that this explanation should be necessary, as we have always endeavored to treat all our contemporaries with the strictest honor in this respect.—Ed. G. M.]

EXACUM AFFINE AND BEGONIA SOCOTRANA—TWO SOCROTAN GEMS.

BY G. W. O.

Exacum Affine.—If the individual plants of this recently introduced annual would grow to the same size and flower at the same time, it would be a decided acquisition to the list of bedding stuff; but it has a most erratic habit: plants under the same conditions, growing side by side, differ considerably in height, breadth and periods of flowering. Single plants dotted over the rock-work give most satisfaction. The color of the flowers is violet-blue with orange-yellow stamens, the habit of the plant resembles *Ophelia corymbosa*, to which it is closely allied.

Begonia Socotrana—is quite a novelty in its way. It stands unique among this extensive genus, but for a useful commercial plant, I am doubtful if it will ever rank high, further than for hybridization purposes. The bright emerald green leaves are peltate, and the flowers are rose-colored. The roots are tuberous, and when the stem dies down, a goodly number of small bulbets will be found attached to the parent; these

will make good plants in a single season. These two plants were the only ones, of any consequence, brought from Socotra, by the expedition sent out under the auspices of the Royal Society, of London, in 1880.

U. S. Botanic Garden, Washington, D. C.

EDITORIAL NOTES.

THE EXPENSES OF LONDON PARKS AND GARDENS.—The amount recommended for the care and maintenance of the numerous parks and gardens of London this year was \$558,000, but only \$202,000 were voted for the purpose. The cutting down is not an index of failing interest in public parks, but from a belief that much of the money is ignorantly wasted.

SHADE TREES.—Dr. L. W. Puffer tells the people of Brockton, N. Y., that it is absurd to select a tree that will have a span of head 40 feet, and then plant them but 10 feet apart. About three times as many trees are set out along the streets as should be set—all of which is as true everywhere as at Brockton. Trees are also set often too near dwellings. He thinks such cities as Brockton should have a city forester to see that trees are properly set and treated afterwards. On account of the bad judgment of the early planters many trees must now of necessity come down, and he fears the city will soon be without street trees of any kind.

THE GROUNDS OF MR. POTTER PALMER.—Mr. Palmer's grounds along the Lake Shore Boulevard have been surrounded by a high stone wall at an expense of \$3,000. It has been suggested by a Chicago paper that a live hedge with barb wire run through it, would have been just as protective and more ornamental, but this will depend on what particular style of gardening the wall is to enclose.

BANANAS AS FOLIAGE PLANTS.—It is remarkable that more use is not made of the Banana as a plant for the summer decoration of American gardens. It has a much grander effect than the Canna, and luxuriates under our summer suns,—especially if in rather damp soil.

WATER LILIES.—Mr. Sturtevant's water lily culture at Bordentown, near Philadelphia, is getting quite famous. A considerable party of lovers of beautiful aquatics, known as the Lotos Club, made a special railroad excursion there on the 9th of September. The famed and deservedly admired

Egyptian Lotus has been naturalized there, and this alone is worth many miles of a journey to see,—to say nothing of the wonderful *Victoria regia* also in bloom at the same time.

THE GOLDEN YEW.—There is not much encouragement for silver leaved variegations in our ornamental trees,—the white portions dying under hot suns. But golden tints prove fast colors, as the ladies say,—and the more we see of them the more we admire. Again, while silver variegated plants are usually more tender than the originals, the Goldenes are usually hardier. Among coniferæ there are now a large number of golden kinds, but none are more beautiful than the Golden Yew. It keeps very yellow—the brightest golden yellow that one can desire; and even when the yellows fade somewhat, as all do at times, this keeps bright longer than any other of the same family. At this writing (July) they are very bright in their glimmer of gold. Recently, on the grounds of the late Robert Buist, of Rosedale, we saw a large plant 15 feet or more high, over which a Virginia Creeper had been permitted to run and cover all except a foot or two of the Yew branches that pushed up above the mass of vegetation formed by the vine. At first glance it was taken for a plant of the *Kolreuteria paniculata*; but what appeared to be the graceful pendulous branches and the early period of the year for flowering, led to the curiosity that discovered the real nature of the plant. Now, we cannot recommend any one to spoil a fine plant of this Yew by allowing a Virginia Creeper to run over it,—and yet we are free to say that the unique beauty of this combination is enough to almost reconcile one to such a sacrifice.

ABIES AMABILIS.—A beautiful specimen of this tree, some eight feet high, is on the grounds of Mr. Caleb Cope, at Chestnut Hill, near Philadelphia. It is of the variety known as *A. lasiocarpa*.

THE AMERICAN MIST TREE.—According to Mr. Falconer, in the *Country Gentleman*, this grows much faster than the European *Rhus Cotinus*. It is one of the rarest of American plants, for though long ago discovered and described by Nuttall as *Rhus cotinoides*, it has only just found its way into cultivation. Mr. Falconer says:

"Our largest plant is 6 feet high, of pyramidal form, very branchy, and 6 feet in spread of branches. We have several plants, now two years planted, and they seem to be hardy enough; in some cases the tips of the young wood get winter-killed. Its slender branches and narrow leaflets are in striking contrast to that of the stout

limbs and large leaves of our common black walnut or the English walnut."

THE SMOKE TREE.—"Bless the dear old Smoke tree," says the *Rural New Yorker*, a sentiment every lover of good hardy shrubs will echo, who has knowledge of it. It should, however, be borne in mind, that the plant belongs to the branch of the *Rhus* family that is more or less dioecious, and that, unlike the human being, it is only the female that wears the beard. Seedlings therefore are not so reliable as plants grown on their own roots. There is a great variety of tints to the "Smoke," some being rosy red, and others green.

NEW OR RARE PLANTS.

THE WASHINGTON CHINA ASTER.—Among the novelties offered in Europe for the coming season is a variety of Aster called Washington. The flowers have been produced four and a half inches in diameter, and the petals are rolled up like porcupine quills, with only a bare opening at the apex.

LESPEDeza BICOLOR.—We believe this is the accepted name of a pretty half shrubby, herbaceous plant, originally introduced as *Desmodium penduliflorum*. Whatever its correct name, it is one of the best possible plants to grow under the shade of trees, or in comparatively dry situations. It is emphatically a plant for wild gardens, where the garden is part woodlands. Almost all plants of the *Desmodium* family are nemorine, and this seems to be particularly a wood-lover.

NEW HARDY RHODODENDRONS.—In the *Garten-flora*, Prof. Regel figures and describes two species, found in the Caucasus, in the district where *Rhododendron Ponticum* grows. One is pure white, and named *R. Ungerii*; the other, with medium-sized cherry red flowers, is described as *R. Smirnowi*.

NEW GAZANIAS.—The *Gazania Pavonia* has always been a favorite garden plant, and recently has had more than usual attention, through being found to do well in the open ground of an American summer. The Germans have turned their attention towards its improvement, and several new varieties are announced.

NEW FRENCH ROSE, CLARA COCHET.—Most of the French roses introduced into England last year have not yet succeeded in gaining golden opinions, except Clara Cochet. Whoever sees this exclaims, "well, that is a beauty." It is

bright rose color, carmine in the centre, of large size and good form. It was raised by Lacharme.

NOISETTE, WILLIAM ALLEN RICHARDSON.—*Journal des Roses* gives a colored plate and a full account of this rose. It was raised in 1875 by Madame Ducher, of Lyons, and sent out in 1887. It was named for the well-known rose-lover of Kentucky. It does not flower freely when young, but this weakness disappears when it surprises everyone by the generosity with which it presents its uniquely colored flowers. Any lover of yellow roses, "could not desire a delicacy more suited to his tastes." It is a very hardy Noisette, standing the "terribly rigorous winter of 1879-80" unharmed. It was obtained by cross-fertilization. Reve d'or being its female parent.

CHOISEYA TERNATA.—This very sweet-flowered evergreen is regarded as hardy in England. A very healthy plant left out last winter to test was entirely destroyed, though the circumstances were rather favorable than otherwise. It will make a nice tub plant, to be treated like an orange or oleander.

A NEW TYPE OF SINGLE DAHLIA—has been secured by Mr. Cullingford, of Kensington, and we direct attention to it as affording a change that will probably be much appreciated. The florets are narrow, pointed, slightly twisted, and placed sufficiently far apart to make a "windmill." The ultra florists will perhaps groan in reading our poor description, but we shall be greatly mistaken if they do not jump for joy when they see the flower. Well, we advise them to look for it, and to be in no great haste to subject it to the old floral rules.—*Gardeners' Magazine*.

SCRAPS AND QUERIES.

SANITARY INFLUENCE OF TREES.—"P. H. F.," Babylon, N. Y., says: "On the subject of the sanitary effect of our best native hardy forest trees, as to planting in cities, etc., I have made inquiries from different sources and can find nothing on the subject except the observations on *Eucalyptus globulus*. Should the subject be agitated no doubt good would result. Any information you may be able to give me will be thankfully received."

[Trees, in common with vegetation generally, have a sanitary influence by absorbing the carbonic acid from the atmosphere, which, in excess, would be fatal to animal life. It is believed that the atmosphere of the earth was at one time much

more highly charged with carbonic acid than now, that much of it was taken up by metals which thus became carbonates, and that the chief mission of the luxuriant vegetation which clothed the earth's surface in the carboniferous era was to clear from the atmosphere the large amount of carbon the atmosphere contained, and which we now have in the form of coal. If the carbon now confined in coal, and which was once in the atmosphere, were to be let loose into the atmosphere, and with oxygen become carbonic acid, no creature could live. One great mission of vegetation is to correct this.

But our correspondent evidently has in his mind the influence of trees in removing disease germs and making places healthy in our time that are notoriously unhealthy. It has been thought that the resinous odors given off by pine trees have an influence on reducing epidemics, and that *Eucalyptus*, or Blue gum, has a similar influence. But our experience with yellow fever showed it worse in some pine districts in the South than anywhere, and the miners in the Blue gum districts of Australia suffer from fevers as bad if not worse than where the Blue gum does not grow.

The only point left is the statement that fever prevailed in the Pontine marshes near Rome, and that there has been none since the large plantations were made there. Whether the fever has so utterly left as represented we do not know, because it is every day experience that newspaper statements are not usually given with that exactness which science demands. Rapid growing trees, however, absorb immense amounts of moisture. They would make a marsh dry. If any diseases prevailed from excess of moisture, any rapid growing tree would have the same effect.—Ed. G. M.]

SOUTHERN BUCKTHORN.—A correspondent from near Jefferson City sends us a specimen for name, which proves to be this plant, *Bumelia lycoides* of botanists. It has not been found by collectors north of this line we believe. It is a very pretty small tree, and deserves culture. There was one for many years in the Bartram Gardens near Philadelphia.

An interesting fact mentioned by our correspondent is, that it grows on limestone rocks where there is scarcely any soil. Other collectors have always reported it as growing in low or wet places we believe.

MOLES.—"J. N. B.," Red House Farm, New

London, Conn., writes: "I, in common with my neighbors, have been greatly troubled by ground moles. They tear up our lawns and tennis grounds, upset our plants in the border, etc., and do much damage. Will you kindly advise me either by note or through the pages of the GARDENERS' MONTHLY, the best way to treat the nuisance? I have used Isbell's Mole Trap, etc., but have not been successful in this way."

[Those who would catch moles by trapping must learn the art of distinguishing between the regular run of the animal, and a mere feeding ground. In the latter they do not return in the paths they make while hunting for worms and insects,—but in their runs they do. The traps must be set to catch them on return. They often have a run under a hard piece of ground to the softer feeding places, and when such a track is discovered all that are troublesome can speedily be caught.]

They may be driven away by inserting tow dipped in gas tar, into their runs. The sense of smell is acute in these creatures; and annoying odors can be detected by them for long distances. An old Germantown gardener used to employ dried herring, as better than tar.—Ed. G. M.]

STAPELIA HARDY IN TEXAS.—"Mrs. Dr. H.," Palestine, Texas, writes: "I enclose a rough sketch of a cactus, not native to this part of the State, though perfectly hardy, and survived last winter out in the yard. There were only two flowers, and neither set any fruit. No spines on

the stem, which is four-sided, notched sharply like an old 'counting stick;' five sepals, five petals, five stamens, a thick crown round the center, color rich nankeen, with purplish brown specks and lines. It stays in bloom several days, and has a foetid odor which attracts flies. Blooms in July and August."

[This is familiarly known as "toad-plant," or "carrion-flower." It will be a matter of general interest to know that it is hardy in that part of Texas, and it may be harder in other places than it is generally supposed to be. Botanically the plant is known as *Stapelia*. They are in numerous species or varieties, and are originally from the Cape of Good Hope. The one described appears to be *S. Asterias*.—Ed. G. M.]

PLANTS AND TREES AT PENCYOYD, MONTGOMERY COUNTY, PA.—A correspondent says: "In a hurried call on your correspondent, Mr. Wooding, gardener to Mrs. Roberts, at Pencoyd, I was much interested in a fine specimen of the Pinsapo fir, *Abies Pinsapo*, as it is usually considered tender in this latitude. It was about 6 feet high and 3½ feet wide. There was also a nice specimen of the Cephalonian Fir. It was also gratifying to note a greater sprinkling of new or rare trees and shrubs than we can see in many places. There are four large greenhouses, and some huge Lemons and Australian tree ferns indicated a genuine love of sound old-fashioned subjects that always give pleasure."

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

In managing house plants, one of the difficulties is the struggle with insects. There are now many kinds of oils and washes sold by florists, that are found very effective; but, when applied in the usual way, are costly. But new inventions come to the flower growers' aid. Light troughs are employed, with a spigot at the end, and the material used in syringing can be drawn off and used over and over again. In the trough a wire cradle is hung, on which the plants can be laid on their sides, so that the operator may syringe the under side as well as the upper side of the leaves. The idea is so simple that anyone can make a syringing

trough for himself, if out of the way of a mechanic who knows how. It has always been against the use of hot water to destroy insects, that it took so much for use. But on this plan the water can be used over and over again, a little boiling water being added when necessary to bring the temperature up to 130°, which is the temperature at which insects may be destroyed without injury to the plants. Warm soap suds is one of the best insect washes, and when mixed with tobacco water is as good a wash as most things. Oil is for hard-wooded things, but has to be used with great caution, as it may clog the breathing pores, and smother the plant. Some use it with water in syringing. The oil, of course, floats on the

surface of the water, but those handy in the use of the syringe know how to stir the water at each insertion so as to draw in only a very little oil with a good deal of water. There are plans for mixing oil with milk or chalk before being mixed with water, when it diffuses through the water more readily than when used alone. Many of these things have been made familiar to our readers, from time to time, through our magazine, but it is well to keep them in memory through our seasonable hints.

How long it takes to get an idea into general practice, has never been better exemplified than in the work of Mr. Saunders, in showing florists that warm water will flow better down hill than up hill. Up to his time, it was an axiom that heat ascended because it was warm. He showed that it did not ascend at all in the true grammatical meaning of the term. Heated air, or heated water, would never rise a hair-breadth above the surface of the earth, if left wholly to itself. It has no ascending power. But when you place a heavier liquid near it, the heavier pushes the lighter out of the way. It is the cold water or the cold air, that makes the circulation, not the warm. Mr. Saunders showed this over and over again in our columns, and moreover showed, by a practical test at Washington, that the sooner we gave the cooler water a chance to gravitate to the bottom, the more rapid would be the flow. The highest point for the water should be right at the boiler, and from there at once the pipes should fall regularly. In other words, the only flow pipe should be the boiler; all the pipes should be return pipes. Although it is nearly a quarter of a century that Mr. Wm. Saunders first undertook this reform, it has moved slowly. But it is getting more recognition of late, and though this excellent gentleman has passed his three-score, we should not be surprised that he lives to see its general adoption, for when once there is a notable break in old notions the disintegration is usually rapid.

In cultivating house or window plants, people often worry as to how to keep them warm. The thought rarely occurs that they may be too warm. But great heat is often the cause of failure. Gas is often charged with what high temperature does. People often envy the windows of the poor. Flowers of any kind seem to thrive. The comparatively low temperature has much to do with it. Flowers like violets, roses, geraniums, fuchsias and many others, are better at a temperature of 50° than they would be at 70°.

This is the time of the year when people who

love chrysanthemums think about starting plants for next year. On this subject, a grower of prize plants says, in the *Gardeners' Magazine* :

"In referring to the preparation of the cuttings, I would strongly advise cultivators to refrain from the too common practice of taking them off below the surface, with or without root. When they are, so to speak, dug up, the plants produce a large number of suckers in the course of the season that are certainly not wanted. The right way in proceeding with the work is, to select short-jointed shoots, and take off the tops low enough down for the cuttings to be about three inches in length when they have been prepared. Each one should be cut clean through with a sharp knife, and have the two lower leaves removed. When the cuttings are prepared in this way, not only are the plants free from a large number of suckers, but they are much dwarfer, as proved by those which form the annual displays here, a fact especially worthy of the attention of those who require the stock for conservatory decoration. The cuttings are here struck in large sixties, four or five in each, and the pots used are clean and efficiently drained. An inch layer of rather small crocks is put in each, and this is covered with a little cocoanut fibre refuse, to keep the soil in its place. For filling the pots, we use a mixture consisting of good turfy loam three parts, leaf mould one part, and enough silver sand to keep the mixture open. The pots are filled with this to within about a quarter of an inch of the upper edge of the rim, and care is taken to press it firm, and make the surface perfectly level. Upon this is placed a quarter of an inch layer of sand that is moderately moist and can be pressed firm without being sprinkled with water. The cuttings are inserted equal distances apart round the sides of the pot, and have the soil made firm about their base."

The time for making cuttings extends from November to February.

Much controversy occurs, as to the injury plants in warm houses are supposed to receive from being watered with cold water. We have never seen the slightest injury to the plant itself by cold water, but it retards flowering. In cases where the plants are required to bloom early, warm water is a great advantage. Outside of this, the ordinary pump water is good enough for watering.

COMMUNICATIONS.

DRYING FLOWERS FOR PARLOR ORNAMENTS.

BY DENNIS KENNA.

The Marsh Rosemary, or Sea Lavender, *Statice Limonium*, is at its brightest on the salt marshes now, reminding us that it is time to cut it for winter bouquets. I have dried it by wrapping old

newspapers around a bunch and hanging it up somewhere out of the way. Three or four thicknesses of paper will exclude the light, and after two weeks it may be taken down to use with grasses and the similarly dried flowers of Everlastings, Bachelor's Buttons and Celosias. The feathered and plumed Celosias dry easily, but the Cockscomb is quick to rot, particularly if large flowers are used.

A *Bacharis halimifolia* which I found near College Point, L. I., supplied me with beautiful white flowers one winter, six years ago; but the shrub was winter-killed, for I could not find it the next summer and I have never come across another.

Flushing, N. Y.

FLORAL EMBLEMS.

BY J. B.

At page 266 of the September number of the MONTHLY you touch on the signification of flowers, quoting from an advertisement from your city paper in reference to colored flowers at funerals. While I believe in sacred things being kept sacred, yet we have to do with these things, and it is well we should be impressed with their true meaning. This leads me to inquire, to what end are all these different designs, and the thousands of dollars spent in flowers in the United States and Canada yearly? There may be some fashion in it, but may we not hope the chief end is a spiritual signification based on our Christian religion, or to shadow forth by outward forms certain truths in the Bible? I find from experience that cultured people chiefly use flowers, both in sorrow and joy, as a silent and practical way of expressing their sympathy in sickness or death, or in love and esteem. But chiefly our work is sacred, as most is funeral work. Taking this for granted the art becomes more dignified. If there be sermons in stones there must be more impressive sermons in these floral designs. For instance, the Cross—reminding us of Him who suffered and died to make an atonement for sin; the Cross, Anchor and Heart—emblematic of Faith, Hope and Charity, the three chief Christian graces. The Cross and Crown reminding us, without the one is taken up the other cannot be secured; they are combined together. The Shield—reminding us of a spiritual enemy, and we need armor. The Dove—Holy Spirit. The Yoke—one of our Saviour's precepts and examples. The Gates Ajar, and many more. The Wreath—an emblem of eternity, or the Eternal One. The Triangle—the Trinity. The Lamb,

the Square and Compass, the three Odd-Fellows' links, all speak in silent language to those who have eyes to see and ears to hear.

The Son of Man is called the Rose of Sharon, and the Lily of the Valley; and we are compared to a flower that springs up in the morning, in the evening is cut down. Flowers are also expressive of joy and always understood. Those in the Old World who wished to do honor to their guests arranged flowers in every room as an expression of joy and honor. Especially to the young are they significant, and seem to charm with praises and joy. What emblems of innocence are the white daisy, the white rose bud, the *Deutzia gracilis*, the double white primrose, etc.; in fact, all ages rejoice in their sweetness and beauty, and all poets have sung their praises.

I understand that flower services are very popular in England, and are becoming a regular feature of Sunday-school work in Canada. The children bring bouquets of choice flowers, presenting them at the Chancel steps of the Episcopal Church. These beautiful offerings are afterwards sent to hospitals, gaols, infirmaries, etc. The address by the Rector usually describes some lesson from the flowers, and so do the following two verses of a hymn from a Church paper:

Great Father bless our simple flowers,
God speed the message that we send—
O, may they soothe some patient hours,
Tokens of this, the children's Friend.

Flowers are the smiles of God from heaven.
We give in love what love hath given,
These roses, children, come to tell
Their tale of thorns and fragrant bloom.
How He was pierced that loved you well,
How fragrance can outlive the tomb.

May His sweet patience still be yours.
The tender buds are perfect flowers, etc.

Frederickton, N. B.

ARISTOLOCHIA ELEGANS.

BY G. W. O.

This new Brazilian flowered with us for the first time a few weeks ago, and what a pleasing surprise! With leaves quite as small as those of *A. ciliata*, the flowers in size come near those of *A. gigas*. The leaves are nearly heart-shaped, slightly glaucescent underneath; the flowers, borne on long stalks, are very conspicuous and strikingly handsome. The concave surface of the perianth is beautifully and uniformly speckled with dark claret on a creamy white ground. This species is very floriferous even in a young state, and entirely free from the peculiar camphorous odor common to other members of the genus.

U. S. Botanic Garden, Washington, D. C.

EDITORIAL NOTES.

SUBSTITUTE FOR GLASS.—Light wire gauze, coated with elastic varnish, is the latest kink.

THE YULAN AS A CUT FLOWER.—The Chinese *Magnolia*, *M. conspicua*, is found very useful for cut flower work in England. It is planted against south walls or fences in that country, and is always ready for Easter.

VANDA SANDERIANA.—It is a comfort to know that in many cases the orchids distributed at the sale of Mrs. Morgan's effects fell into worthy hands. Before us is a photograph of this fine orchid, for which Mr. Charles F. Osborne paid \$900. The flowers, judging by the scale, are 4 inches across, and the plant evidently in glorious health.

INSECTICIDE OR SULFO TOBACCO SOAP.—The Rose Manufacturing Company, of New York, has prepared an article which seems to meet with general favor. The most troublesome of all, red spider, is said to be easily controlled by this mixture.

MAIDEN HAIR FERN.—The Maiden Hair fern in use by florists is chiefly *Adiantum capillus veneris*. It is said that a new variety has been produced that is nearly equal in vigor and beauty to *A. Farleyense*. It is called *Magnificum*.

A NEW METHOD OF GLAZING SASH.—It is well known that all glass now (both in portable sashes and in fixed greenhouses), is simply imbedded in putty, and kept in place by glazier's points, no putty being now used on top, as was formerly done. It has been found that when the glass lays on the sash-bar thus imbedded the putty soon rots or wears out, and water gets in and not only loosens the glass but rots the bar as well. A most simple plan to obviate this is to pour along the junction of the bar with the glass a thin line of white lead in oil, over which is shaken dry white sand. This hardens and makes a cement that effectually checks all leakage. It is quickly done.

I have seen glass, so cemented, that has stood for ten years, still in perfect order, and it looked as if it would stand for ten years more without further repair. This plan, which is but little known as yet, is of the greatest importance; had I known of it thirty years ago I would have saved many thousands of dollars in repairing, besides having the plants under this water-tight glazing in better condition.—*Peter Henderson, in American Agriculturist.*

FUNERAL WREATHS.—I am glad to be able to agree heartily with "Veronica" on the subject of floral wreaths and crosses at funerals. A custom overdone often brings its own condemnation. A few flowers or even sprigs of foliage upon the coffin is quite a different matter, and should be encouraged. Not only should the floral offering be emblematic, but its bestowal should be purely personal. Of course, all could not give from their own gardens, as too many have neither gardens nor flowers, but in most cases a mere handful is not difficult to obtain, and if only by purchase, then be it so. A modern reformed funeral devoid of the now stereotyped wreaths and crosses would hardly lack sweetness or picturesqueness did each one present carry a little bunch of something leafy or floral to cast as an offering upon the coffin of the departed. Casting flowers upon the coffin, even though they be presently buried, is more desirable than leaving wreaths and crosses upon the grave to wither and decay. Planting growing plants that will produce beautiful flowers upon graves is a pleasant custom and one that cannot be too strongly advocated. Tending them is a labor of love; they are always emblematic of the "hope which springs eternal in the human breast," and they enliven with their sweetness and beauty the habitation of the dead.—*A. D., in Garden.*

BUTTON-HOLE ROSES FOR AUTUMN AND WINTER.—Tea-scented roses are the most suitable for producing blooms for button-holes during autumn and winter, but it is essential that the best varieties be chosen. A good selection would be, *Devoniensis* (creamy white), *Catherine Mermet* (rose), *Eliza Savage* (pale yellow), *Isabella Sprunt* (white, with pale yellow centre), *Madame Falcot* (apricot color), *Madame Lambard* (bronzy red), *Marie van Houtte* (yellowish white), *Safrano* (fawn color), *David Pradel* (rose), and *Niphetos* (white).—*Gardening Illustrated.*

BRICKS OF CORK.—The waste cuttings of cork are now being employed for making bricks, which can be used for walls, impervious alike to heat or damp. The cork cuttings are reduced to powder in a mortar, and mixed with lime or clay; and from this composition the bricks are made in the usual way.

CAPE PLANTS.—The *Revue Horticole* gives a colored plate of the *Burchellia capensis*, or rather a large variety of this very old plant, of which even a colored plate will delight the heart of those old-fashioned gardeners who can remember

the time when the culture of "cape plants" was fashionable. These flower through the whole winter season, and there is possibly no branch of gardening that could possibly give more pleasure than their cultivation. It requires, however, a skill that is rare in these days, as the intelligence that formerly existed among gardeners in these lines, finds better recompense in other pursuits.

THE OX-EYE DAISY.—This introduced weed, against the spread of which an attempt was recently made to induce the Pennsylvania legislature to issue an "act," is getting so popular with florists, that they will soon have to be "protected," rather than legislated out of existence. The French are also fond of it. They call it the common Margaret.

A NEW MAIDEN-HAIR FERN, ADIANTUM FRAGRANTISSIMA.—Maiden-hair ferns, or Adiantums, are very numerous; but few can compete with it in special beauty. But another unique one has appeared, which seems to have some merit equal to that of the Farley's Maiden-hair. Messrs. E. G. Henderson & Son, of London, thus refer to it:

"In introducing for the first time this lovely fern, which was raised in their establishment, E. G. H. & Son have no hesitation in saying, that never since the introduction of *A. Farleyense*, has anything approaching such a charming variety been introduced; in habit it is all that can be desired as a decorative plant, the fronds rising well from the crown, terminating into a graceful curve, forming quite a plume-like frond, while the pinnæ,

which is of moderate size, is beautifully cut, as in the way of *A. Farleyense* alcorni, and in a young state; the centre of the same is of a golden-green, verging off into a paler shade, and changing to a deeper green as it approaches maturity; and in addition, when growing, it is deliciously fragrant, a few plants filling the house with a sweet perfume. Either as a valuable addition to a collection, or for exhibition or decoration, this remarkable novelty is certain to become the most popular Adiantum in cultivation. The fronds when cut, last a length of time; some which were cut as an experiment, remained in perfection more than a week in a warm room. Being of a vigorous constitution, and of such surpassing elegance, it will quickly supersede the old favorite, *A. cuneatum*, for all purposes."

NARCISSUS GROWING.—In the Channel Islands, between England and France, there has come a windfall in the recent fashionable turn for Narcissuses—they are grown by the hundreds of thousands as tuberoses are here. But will the fashion hold? If it will, Americans might take a hand in the trade. There is some doubt about its permanency over there. A correspondent of the *Gardeners' Chronicle* says:

"The Narcissus growing was at first somewhat of a venture. Nobody would have dared to prophesy, five years ago, that about every three ladies out of five would take their revenge on the youth who preferred his own image to their charms, by wearing the posthumous emblem of his existence in the bitter cold winds of February and March. Yet so it is. Will what appears a fickle caprice endure as a fashionable furore? This is a question frequently put by the islanders."

FRUIT AND VEGETABLE GARDENING.

COMMUNICATIONS.

PROFITABLE PLUMS.

BY T. T. SOUTHWICK.

The practical results growing out of orchard culture of the plum seem to be demonstrated in this market; more plums being brought to market than could be sold at any price, and large quantities remaining on the trees ungathered.

Fifty cents per bushel has been the ruling price for good varieties until the latter part of the season, when prices fell to 35c.

The Monroe is the favorite canning plum here, and the one most abundant in the market. Its

light color, good quality, and its freedom from astringency, cause it to be sought by the canners.

All that seems to be needed to obtain an abundance of plums is to plant in orchards instead of a few trees.

Rochester, N. Y.

EDITORIAL NOTES.

THE WRAGG CHERRY.—This is a variety believed to be of German origin, but which can be identified with no variety under cultivation, and hence has, like the Bartlett Pear, to bear the name of its American foster parent till its proper nomenclature has been traced. We have a drawing by Preslete before us, and this artist is well-known

for his fidelity to nature. One may fairly judge from this picture, that the Wragg cherry is a very productive and beautiful variety.

FLORIDA ORANGE CROP.—Notwithstanding the losses by the "freeze,"—such a freeze as may not occur again in a century,—the orange crop of Florida this season is estimated to be fully two-thirds as large as it was last season, and those who have them expect to realize much higher figures. There certainly will be no glut in the market. "It is an ill wind," and so forth.

THE TUBEROUS ROOTED GRAPES.—Everything new in relation to grape culture has an especial interest to Americans, and hence we called attention a couple of years ago, to the discovery of some herbaceous species with tuberous roots, which grew up like hop vines, perfected their crop, and then died to the ground, and prepared to start again in the same way next season. They are natives of Cochín-China, a part of the world that has not been well explored, and from which we have now continually new things. Whether our suggestion that some one try them in our country has been followed or not, we have no information. The next best thing is to note what the rest of the world is doing in the matter. We give the following from the *Gardeners' Chronicle*, showing some experiments at Hong Kong, in Southern China, which is about on the same line of latitude as Southern Florida:

"*Vitis Martinii*.—The Superintendent in the report of the Botanical and Afforestation Department of Hong Kong, 1885, states that this 'new tuberous rooted vine from Cochín China, fruited this year in Hong Kong for the first time. The seeds were procured from the Botanic Gardens, Saigon, in 1883. The seedlings were planted out the same summer and made several shoots, each of which died down in the winter. They began to make fresh shoots about the middle of April, 1884, and grew well during the summer, but showed no inclination to flower; and again died down in the winter. Last summer they started vigorously, and showed flower about the end of May. Many of the bunches, however, failed to develop fruit, owing apparently to imperfect fertilization, but there was a good average crop of bunches on the canes irrespective of the failures. The fruit was ripe in October, many of the bunches weighing one pound each. The berries, when ripe, are jet black, and rather under the average size of ordinary grapes. The seeds are large in proportion to the size of the berry. The flavor is a peculiar blending of sweetness and acidity, very pleasant, but tending, in my case, to leave a curious smarting sensation on the tongue; others might not find this peculiarity at all objectionable. The flavor might be altered, as is well known, by varying the mode of cultiva-

tion, but the size of the seeds is likely to prevent the grape becoming popular as a table fruit; it may, however, be very well adapted for a wine producer."

MOORE'S DIAMOND GRAPE.—It takes a long time for a grape to get into the market, or to be well known sometimes. This one was, we believe, raised at the same time with the Brighton, by Mr. Moore, of Brighton, New York. It is a cross between Concord and Iona for the pollen. It is a white grape, bunch as large, but berries rather larger than Brighton. It is early and Mr. Moore regards it as one of his best.

IMPROVED DEWBERRIES.—Though the fruit of this species ripens earlier than the ordinary blackberry, little improvement has been made in the usual wild form. But the Lucretia is said to be a great advance on the original, and to be in every way a desirable fruit. The Willson Early has been supposed to have some relationship to the Dewberry.

CLASSES OF PEARS.—We quote the following from the *Gardeners' Magazine*, accounting for the names various classes of pears have received:

"Bergamot is a collective name for a distinct class of pears. A Bergamot pear takes its name from Bergamo, a town in Lombardy, where certain kinds of small pears were grown, and became famous for their sweetness.

"A Besi pear is a foundling, a wildling, a thing without a history. Thus, Besi d' Héry was discovered in the forest of Héry, in Brittany. Besi de Quessoy was found in the forest of Quessoy in Brittany.

"A Beurré pear is a buttery pear; therefore has, or should have melting flesh.

"Fondant is the equivalent of Beurré, and should indicate a melting pear.

"Bon or Bonne might pass for good, but it may mean large, unusual, extra fine in any way whatever.

"A Catillac is a reminder of an engine of punishment, 'parce que sa chair s'attache à la gorge de celui qui la mange crue.'

"Colmar is the capital of the department of the Haut-Rhin, France, sweetly situated at the foot of the Vosges mountains. It is a great place for manufactures, and also for pears, the variety known as 'Colmar' having been grown there for hundreds of years, and it probably is one of the thirty or forty sorts the Romans were choice about.

"Delice, m., and Delices f., imply delightful, and it happens that all the pears having this prefix are good.

"Doyenne refers to the deanery, and seems to imply that the pear having such a prefix originated in the curé's garden. But Leroy knocks the dean on the head by saying the name was given to the pear known as Doyenné to indicate its ex-

cellence, 'd'une chose de qualité supérieure c'est la doynné.'

"Muscat as applied to a pear suggests that it has a musky flavor.

"Passe apart from a suffix means almost anything, but in this particular connection it indicates high quality, thus *passe-fin*, excellent fine cloth, as in *Cotgrave*.

"A *Rousselet* is a red pear. A *Rousseau* is a red-haired man. The verb *roussir* means to redden.

"*Crasanne* is a troublesome word as a prefix to a pear; it suggests the choke pear, which was anciently so called.

"*Calebasse* means like a calabash, or a gourd, or a bottle.

"Wardens are long-keeping cooking pears."

CHARLES DOWNING STRAWBERRY.—It is singular to note that while some varieties of fruit have local tastes and soon have to be replaced by other novelties, others do well everywhere, and defy all attempts of the new upstarts to dethrone them. The Concord grape and Charles Downing strawberry are two of these. Mr. Bull, of Concord, will long be remembered for giving us the grape, and the late Mr. Downer, of Kentucky, should not be forgotten in our gratitude for this good strawberry.

BIDWELL'S EARLY PEACH.—This is regarded as one of the most profitable of all peaches in Florida, and other points South.

SILVER LEAF IN THE PEACH.—In our country we have a fearful disease in the peach known as the yellows, because the disease gives a yellow cast to the disease. No one feels certain he knows the direct cause. They have a similar puzzle in a peach disease in Europe. It is known as silver leaf.

FIGS.—From a paper by Dr. Eisen, on fig culture in California, we learn that in the best fig-growing countries there are three crops a year. When the leaves die in the fall, a fig comes from the axil, on the last year's wood, next year. Then figs come out from the axil of the new leaf; and later in the season, figs come from the ends of the growing shoots. These do not always ripen. The intermediate ones are the best, and furnish the chief fig crop.

"When the figs are ripe, or sufficiently ripe to be dried and cured, they in some varieties drop to the ground, but in others again hang on to the tree, and must be cut off. When this time arrives in Smyrna, the figs are picked and put one by one, without touching each other, on matting, or even on the ground covered with cut grass or straw. The figs are on this exposed to the sun for ten or twelve days or less, according to the weather.

To begin with, they are turned every day, so as to be equally exposed to sun and air, and if dew is expected, they are covered over with matting during the night time. What is needed during the drying season is, not an excessive heat, but steady sunshine and dry winds. It seems to me, that here in California we could satisfy the most exacting Turkish demands in this respect. When the figs are sufficiently dry, the skin feels dry, but the inside should yet be perfectly soft and pliable. The ripe and sufficiently-cured figs are now picked out, and the others left to remain until ready. It will thus be seen that the figs are not dried haphazard on roofs or the ground, and then dumped into boxes and shipped. This I have known to be the general practice in California, and still we wonder why our figs are not any better. When the figs in Smyrna are dried sufficiently, they are by the fig-raisers assorted in three different sizes, then sacked in sacks made of camel's hair—barley sacks would, on account of the fuzz, not do—and then sent into Smyrna. The merchant who has furnished the fig-raiser with his year's supply, takes the crop out of his hands. The figs are now again assorted, and are then ready to be packed."

In France, they have a plan for hastening the maturity, which Dr. Eisen thus describes:

"Less than two weeks before the expected maturity of the fig, and when the eye of the fig begins to color, a drop of pure olive oil is deposited on the eye of the fig. This operation is always performed in the evening, shortly before sunset. The next day the fig, which was green and hard, shows softening and change of color, and the maturity of the fig is henceforth advanced eight days. This process is used only for table figs, but is not considered profitable for figs destined to be dried."

In regard to packing he says:

"In packing, Smyrna excels both Portugal and Spain. We all admire the way the Smyrna figs are packed—it is the very perfection, and I believe cannot be improved upon. When the dried figs reach the packing houses, they are, as I said, again assorted by women, and then packed by men. While packing, the hands of the packers are constantly kept moist by sea water, which prevents the sugar sticking to the hands. There are two ways of packing: In the first, the figs are flattened out in such a way that the eye of the fruit is placed very nearly in the centre, and the stem very nearly opposite the same. The figs are now packed in layers in boxes, in such a way that the front margin of every fig just sufficiently covers the stalk end of the fig next in front. The figs are packed in straight rows the same in the bottom, middle and on top. To keep every row separate, and to prevent one row overlapping the other, I am satisfied that they use a small frame of iron, with partitions running longitudinally and vertically. The figs must first be packed in this frame and slightly pressed. The frame is now withdrawn from the box, and a heavy pressure is applied, which causes the surface to flatten out and become smooth."

In regard to the flowers of the fig, the following will have great interest, as it will account for a difference of opinion among intelligent men, some of whom insist that the cultivated fig is wholly pistillate, and never has staminate flowers:

"The fig itself is something more than a seed vessel of a flower. The fleshy part is a thickened, hollow receptacle, closed, except at the very narrow opening called the eye, situated at the top of the fig. This receptacle on its inner side contains numerous minute flowers, crowded together and covering the whole of the surface of the cavity. These flowers are male and female, or staminate and pistillate. The female flowers occupy by far the largest room, and all the lower part of the cavity. The male flowers, again, the more or less narrow zone, immediately surrounding the eye of the fig. In the cultivated or edible fig the male flowers are generally wanting or rather replaced by barren scale-like leaflets. In the different crops, the proportion between the male and female flowers is quite different. The figs of the first crop, or the *bocorre* are those which carry the most male flowers. The second crop, or the 'karmouse,' carry few, and the third or last crop carry none but female flowers. As I said, except in the wild or Capri fig, the male flowers are seldom developed. In the figs grown in California, and which I have had opportunity to investigate, the male flowers were always replaced by scales; this has also been previously found to be the case in Italy, and Professor Arcangeli states that according to his own observations the two most generally cultivated figs around Pisa, the Fico verdino and the F. piombinese, never have any perfect seeds developed, while the F. biancolino, which is considered a semi-wild species, has, among numerous imperfect seeds, some which are easily germinated."

In regard to dried figs of our markets having fertile seeds, it may be remarked that McMahon's *American Gardener*, written nearly a hundred years ago, gives full directions for raising plants from dried fig seed, which must therefore have been fertile.

Dr. Eisen's pamphlet may, no doubt, be obtained from the author at Fresno, and is well worth perusing by all interested in fig culture in America.

GARDEN CATS.—Attention is being given in England to training cats to protect strawberry beds and other garden treasures from the voracious English sparrow. The cats wear collars, and are tethered by light and strong cords. The tethers are attached to comfortable cat houses which can be moved about from place to place as desirable. It is said a thoroughly trained cat enjoys the life hugely.

A NEW RACE OF TOMATO.—*Revue Horticole* says that a new and very valuable race of tomato

has been produced by Mons. Hippolyte Deschamps, chief gardener to the Count of Boisgelin, which is fully equal to President Garfield in good qualities. It bears the name of Boisgelin Tomato.

HORSE-RADISH CULTURE.—Mr. A. Hamman, writing to the *Florida Dispatch*, says:

"In the State of New Jersey, my former home, I planted on moist soil, in banks 3 feet apart, 18 inches apart in the row. The average weight in eight years was two pounds each, the average price during the same time was 8 cents a pound, or \$1,600 to the acre; but I must say we used from \$350 to \$400 worth of manure from a slaughter-house at \$1.50 per ton to each acre. The plowing, planting, cultivating, trimming, etc., was worth \$200 to \$300, according to the season, leaving a profit of \$900 to \$1,150 per acre. I raised horse-radish alone, but it can be raised together with cabbage, beets or lettuce; if done in this way the roots are not as strong or thick as if they are when planted alone."

SCRAPS AND QUERIES.

POTASH AS A PROTECTION AGAINST PEACH YELLOWS.—"F. M.," Vineland, N. J., writes: "Is it clearly demonstrated that potash is a protection against yellows? I want to set out a large orchard, and would gladly invest in a supply of potash when planting, if that is all required to make the peach orchard proof against the disease?"

It is by no means demonstrated, that a want of potash in the soil is a safeguard against yellows. There are plenty of instances where trees have the yellows in soil over-abounding in potash.

It has been clearly demonstrated by Prof. Penhallow, that there is a deficiency of potash in the wood of trees affected by yellows; but this may be from the diseased condition of the tree, depriving the tree of its usual power to assimilate what it ought to do; or from properly using the vital power over the potash element, and not from any scarcity of potash in the soil itself.

GRAPE MILDEW.—A French correspondent says: "You most likely know, that after having been invaded by the Oidium and by the Phylloxera, our vineyards are now subject to the mildew. The Oidium is beaten by sulphur. The Phylloxera, by the importation of American vines as stocks, is prevented. But the mildew continues to annoy us very much. A remedy has been used—a mixture of chalk and sulphate of copper. But it seems very dangerous, as several persons have been lately poisoned by eating grapes which had been aspersed by that mixture."

"I therefore beg you to let me know as soon as possible, what is the remedy employed with you? You would oblige me very, very much."

[It is remarkable, that though the mildew—a small fungus named *Peronospora viticola*—is an American pest, it is not so serious a trouble in its own country as it is when it gets among the French people. Years ago, when we had the hot-house forcing system of propagating grapes in vogue, the mildew was a matter of consternation with grape-growers; but since more attention has been given to getting plants with sound constitutions, we rarely have any correspondence seeking for remedies. We fancy it has ceased to be a very serious cause of trouble with us, though here and there people suffer. All preparations of copper are dangerous, as we all know who have to use Paris green.—Ed. G. M.]

MINNEHAHA GRAPE.—Col. Wilder sends a bunch of this seedling, a second cross of Rogers' Muscat of Alexandria on the flower of Massasoit. It is a white variety, and so far as we can see, in no way inferior to some of the European kinds, when grown in the open air.

It must be very gratifying to those who are so patiently laboring in the work of improvement, to find so much to encourage them to persevere.

PRODUCTIVENESS OF THE LINDLEY GRAPE.—Mr. Lorin Blodget, Broad street, Philadelphia, says: "I am greatly obliged by your generous notice of my grapes. They are abundant yet, and if I could send conveniently I would put up a box in fine condition. My son picked twenty-five pounds on Monday—all from the one vine of Lindley, which gave us the first ripe grapes August 7th. They never mildew, rot or decay from any cause other than the birds.

"I also have a seedling *Eestivalis* bunched very much like your beautiful 'Bertrand,' but mine is not worth propagating, although good, bearing twenty bunches this the second year. I do not see any grapes in market from the New Jersey vineries, or any locality southward. I believe the Lindley would stand the climate perfectly and furnish a marketable grape far superior to Catawba."

BLACKMAN PLUM.—Mr. W. W. Stell, Paris, Texas, says: "This plum is offered for sale in almost every fruit catalogue I receive; I wish to know if any one has ever fruited it and what of the quality of fruit, and at what age the tree bears? I do not believe it fruits at all; am led to this conclusion by the conduct of a seedling of

the Wild Goose originated with me some seven years ago. This seedling in growth is precisely the same as the Blackman, so far as I can see, and it has never bloomed, and I do not believe it ever will. Some months ago I asked the above question through *The Texas Farm and Ranch*, and up to this time no one has given an affirmative answer, but the Horticultural Editor of *Farm and Ranch* agreed with me in the opinion that the Blackman plum does not bear fruit. Now if we are correct, should not the sale of this plum be stopped, and that at once? Are we as nurserymen doing our duty to disseminate fruit trees without first testing them?"

QUALITY OF THE KIEFFER PEAR.—"B. F.": We do not know that there is any good to be gained by "inviting the opinions of eminent men" on the quality of this fruit, for, as we have recently noted, their opinions must necessarily vary according to their facilities for managing the fruit. It is certain that much depends on management. So far as the Kieffer pear is concerned, it is well known, on the testimony of a very able fruit committee at the Centennial Exposition, that the fruit exhibited there by Mr. Kieffer himself were absolutely delicious in every sense of the word, and the award to him was made solely on account of the delicious quality and the beauty of the fruit. No one could have a word to say against the "opinion" of this eminent committee. On the other hand, other growers equally as eminent have had fruit before them which we have just as good reason to believe were absolutely worthless; but these pears had not been managed by Mr. Kieffer. Of what use then are further "opinions?" It is not only on this pear, but on every fruit, that opinions of eminent men will vary according as they know how to manage the special idiosyncrasies of a fruit or not. For instance, most of the German-Pennsylvania farmers will assert that there is no better table apple than the Smokehouse. For our part we know that we have tasted a Smokehouse apple which was as delicious in flavor as any apple we ever tasted. Yet so eminent an authority as Charles Downing, in his large edition of "Fruits and Fruit Trees of America," says that it has only culinary value.

We are satisfied that while soil and climate have a great deal to do with the character of a fruit, the grower's own skill or facilities in the proper management of a fruit after nature has done her part has much to do with starting its reputation.

FORESTRY.

COMMUNICATIONS.

FORESTRY—THE ADIRONDACK WILDERNESS.

BY THOMAS BENNETT.

Having spent part of three years in the great Adirondack wilderness, N. Y., allow me to say a few words in favor of these "grand old woods."

I am inclined to speak very highly of this place, but different individuals take different views very often of the same subject, and value things according to their own measure of usefulness. Some go there for health, some for sport and pleasure, and some to get away from the great summer heat in the lowlands. But there is now another item of interest, I think, to which I would wish to call attention by and by. It is very hard to portray the beauties of this place and do it full justice; it must be seen to be appreciated properly. Certainly the landscape scenery is grand and very beautiful, composed as it is of wood and water, hill and dale. The vales consisting of chains of lakes, the traveling is nearly all performed by water. The sloping hills on either side present the rich forest to the best advantage. Scarcely any level land is to be seen.

The chain between Blue Mountain and Forked Lakes consisting of Blue Mountain Lake, Eagle Lake, Utowanna Lake and the Raquette Lake is supplied with four beautiful little steamboats which ply up and down every day during summer on these placid waters. The dark green verdure of the dense old forest is very attractive, and the work of the Great Landscape Artist who laid out this public park will always be admired; and although the prospect is always the same, wood and water, the eye never tires because the scenery changes at every turn, and the outline of these lakes is devious and ever varying. No one need wonder why His Excellency Grover Cleveland loves to visit this romantic place.

There is a nice mixture of deciduous trees among the evergreens, the latter, however, mostly predominate. The species of either are not numerous, yet this detracts nothing from the scene. Of the coniferous trees the Balsam Fir or Balm of Gilead species (*Pinus Balsamea*) is plenty and much admired, not only for its shape, color and

beauty of outline, but also for the sweet and wholesome odor which it exhales. The White or Weymouth Pine (*Pinus strobus*), the Hemlock Spruce (*Pinus Canadensis*), and the Black Spruce (*Pinus nigra*), are the principal.

Bordering the lakes is found the American Larch or Tamarack (*Pinus pendula*), and the Arbor Vitæ (*Thuja occidentalis*), in great plenty. There are a few plants peculiar to the margins of the lakes. These are the White Cedar or Arbor Vitæ, the Shad-bush (*Amelanchier*), two species of Alder (*Alnus*) the Winter-berry (*Prinos*), two species of Spiræa, very ornamental shrubs, three Viburnums, one Mountain Ash (*Sorbus Americana*), the Huckleberry (*Vaccinium*), "and any quantity" of dwarf Laurel (*Kalmia angustifolia*). Great beds of prostrate Yew (*Taxus Canadensis*), are frequently met with, and its rich dark green color looks very fine.

The principal deciduous trees are four species of Birch (*Betula*), two Poplars (*Populus*), two Beeches (*Fagus*); Ash and Elm are scarce. Small loss for they are objectionable. The lack of Oak and Chestnut is not perceptible, for their place is well filled by four species of Maple (*Acer*). *Acer saccharinum*, the sugar Maple, is the most plenty of all the deciduous trees, and it appears to me here is a very interesting point for the lovers of forestry and all those interested in tree planting.

Let us now consider how this large piece of public property consisting of about 6,400,000 acres can be utilized for the public good. The lack of trees on the Western prairies is felt as a great public loss, and seems to retard the progress of colonization. Plans are being devised to establish trees there, and great encouragement given to the planters. Land for tree nurseries is demanded. Now here it is—cheap and plenty—but the land belongs to the State of New York, not to the general government, some one will say. No matter, a compromise can easily be made. Now suppose we allow one-quarter of the surface for water and one-quarter for mountain tops and inaccessible places and one-quarter for uncongenial places for trees to grow, still we have one-quarter for our nursery or 1,600,000 acres of nursery patches to be attended to, and whatever way you take it will yield an abundance of trees almost spontaneously

with a little attention. The nurserymen of the U. S. cannot supply one-half the trees that should be planted. I speak chiefly in favor of the Sugar Maple, that valuable tree that will adapt itself to almost all localities, is easily grown, and about the safest to plant as a shade tree; and again look at its value as a sugar producing plant. We find in the statistics of the last U. S. Agri-

EDITORIAL NOTES.

FORESTS AND CLIMATE.—An exchange, inspired by the last year's report of the New York Forestry Commission on its table, says:

"In Kansas, the plantings of the new settlers have already carried the rainy belt farther west. In California, the same cause has sensibly affected the dry season, and it is now believed that by the simple process of tree planting the great dry basin of our American interior may be rendered fertile, fruitful, and able to sustain a great and thriving population."

In the next year's report, it will be in order to explain why the rainy belt receded so far East this season as to ruin thousands of settlers.

CERCIDIPHYLLUM JAPONICUM.—At the Centennial, the Japanese had specimens of wood of a forest tree that seemed hitherto unknown, and yet bore evidence of great value. The tree has since been imported, and besides its probable value as a rapid growing timber tree, it has great beauty of an ornamental kind, and it promises to have a great popularity. The specimen illustrated made a growth of three feet a year. It has rather an erect growth, not unlike a Lombardy poplar. The plant is said to belong to the Magnoliaceæ, but the leaves are opposite, about the size of those of an apple tree, and turn to a bright purple in fall. So far as it has yet gone, it has not developed any faults, and for beauty it has few superiors, while it will, doubtless, in time obtain some reputation in American forestry.

TREES FOR THE SEA-COAST.—The Norway is the best of all the maples for resisting the salt spray from the ocean, and is almost equal to willows and poplars in this respect.

THE SILVER FIR.—The fine specimen, once so famous, growing on the old battle-ground at Germantown, is now nearly dead. Planted in 1800, after the battle of the Revolution, it reached 100 feet high in seventy-five years. In its own country it often grows larger than this. Griger says: "In narrow valleys in the south of Germany, between the Swiss mountains and the Black Forest, on rich friable, loamy soil, it attains the height of 150 feet, with a trunk 16 to 20 feet in girth.



Cercidiphyllum Japonicum.

cultural Report for 1885 that over one-twelfth of all the sugar produced in the United States comes from the sap of the Maple tree (*Acer saccharinum*). Now I maintain that this tree can be grown in the Adirondack wilderness so easily, cheaply, with so little trouble and to such an extent, that many millions may be shipped annually, and the supply is almost inexhaustible.

Trenton, N. J.

FORESTS IN JAPAN.—There are about 100,000,000 acres in Japan, of which one-third is still virgin forest.

GROWTH OF THE CALIFORNIA MAMMOTH TREE.—This wonderful tree grows rapidly in England. Some specimens about twenty years old are 40 feet high, according to the *Gardeners' Chronicle*. In our country, it suffers severely from the attacks of a fungus, that few escape, and most die quite young.

THE LARGEST DOUGLAS SPRUCE IN ENGLAND.—It has been supposed that this noble Spruce would not grow as tall in its own country as on the western coasts of the New World. But the following from the *Gardeners' Chronicle*, alluding to the pinetum at Dropmore, gives the following account of one:

"The *Abies Douglasi* here of more than 120 feet in height, is another pet of the pinetum, and its pride. It has offspring around it, especially a tree of 1835, growing by the carriage-drive, a cutting from the original tree, and laden with heavy branches bearing many cones. The original tree carries us back to the days of Mr. Frost's honored master, Lord Grenville, the founder of Dropmore, and the encloser of the roughs and wastes which he supplanted by the present grounds 600 acres in extent. Lord Grenville, being a Fellow of the Horticultural Society, sent to Dropmore some of the seed which the Society had received from Mr. Douglas. It was sown in 1827, and the big tree was planted in 1830.

THE CHERRY OR MAHOGANY BIRCH.—This tree, native of the Eastern United States and Canada, seems to be growing in popularity for its timber in the old world, and it may be of interest to American forest planters to examine how far its culture may be worth encouraging in our country. *Gardening Illustrated* says:

"The Mahogany Birch, or Mountain Mahogany, has been found well adapted for cultivation in Britain, where it grows freely, attains to a large size, and produces timber of excellent quality; indeed, in this latter respect we are now fully convinced that it has few rivals amongst the general run of our forest trees. For all this, few indeed are the specimens one will meet with in any part of the kingdom, which is, no doubt, attributable to a want of knowledge regarding its utility for general planting in this country. Grown under favorable circumstances, it attains a height of 50 or 60 feet, is of Cherry-like appearance, but with darker bark, and cordate, finely serrated leaves. A peculiarity, noticeable at least in the trees here, is the mode of growth, which seems jointed, as in a Bamboo, this being attributable to the quick rate of growth, and non-production of branches unless at the termination of each season's shoot. The catkins, which are not unlike those

of the common Birch, are destitute of foot-stalks, and composed of simple undivided scales.

"As regards quality of the timber produced in this country, we have found it to be first-class, ample opportunities having been afforded us of judging it both in a rough and converted condition. It is reddish in color, and beautifully marked with lighter patches, close-grained, firm, and takes a high polish. For carving, it is well suited, while the cabinet-maker is only too pleased to purchase a log of it when for disposal."

THE HEMLOCK SPRUCE IN EUROPE.—It is believed that the Hemlock Spruce does not thrive in Britain. It is, at any rate, seldom planted there. Yet there are fine specimens. There is one 100 feet high at the Duke of Devonshire's at Chatsworth, says the *London Garden*.

IMPROVED METHOD OF PRESERVING WOOD.—The improved French method of preserving wood by the application of lime is found to work well. The plan is to pile the planks in a tank, and to put over all a layer of quicklime, which is gradually slaked with water. Timber for mines requires about a week to be thoroughly impregnated, and other wood more or less time according to its thickness. The material acquires remarkable consistence and hardness, it is stated, on being subjected to this simple process, and the assertion is made that it will never rot. Beech wood prepared in this way for hammers, and other tools for iron-work, is found to acquire the hardness of oak, without parting with any of its well-known elasticity or toughness, and it also lasts longer.—*Indian Forester*.

A GIGANTIC OAK.—One of the sights of Paris at this moment consists in the trunk of a gigantic oak placed in an iron boat especially constructed for the purpose, and moored in the Seine near the Pont de la Concorde. According to M. Ch. Thays, in the *Revue Horticole*, this trunk was found accidentally in the bed of the Rhone at La Balme as long ago as 1874, when, during a period when the water was low, a branch was observed sticking out above the surface. On closer examination this was found to proceed from a huge trunk embedded in the bed of the river. Not till ten years later—1883—was the level of the water again sufficiently lowered to enable the tree to be exhumed. Five months were occupied in the task of removing it from the bed of the river, some 10 meters of sand and gravel having had to be removed in order to liberate it. Ultimately on March 25, 1884, it was brought to shore, where the huge dimensions of the trunk were ascertained as follows: Length, 31 metres = 101.7 feet; cir-

cumference at the origin of the roots, 9 metres; circumference at the level of the soil, 6 metres. The actual weight of the tree is 55,000 kilogrammes. The age of the tree is estimated at from 400 to 450 years. The boat, called the *Dryshpore*, or Oak bearer, is intended to transport the tree from river to river, and we may perhaps see it moored alongside Cleopatra's Needle, whose adventures in a similar boat will be remembered by our readers.

[About 40 inches is a metre, and 2 lbs., 6 oz. a kilogramme.]

THE COLORADO DOUGLAS SPRUCE.—As well known in our country, Mr. Douglas demonstrated several years ago that while this form would not make the timber tree that gives the Pacific form such a reputation, for ornamental purposes it is far superior. In England they call it the Blue Douglas spruce, which may be a better name.

SCRAPS AND QUERIES.

FOREST FIRES.—Mr. R. L. Lamb, Charleston, S. C., says: "I notice your opinion of the Forest Wardens in the September number of the *GARDENERS' MONTHLY*. I think that they would prevent forest fires from destroying the forests about as easily as I could prevent the earthquake from knocking Charleston into a cocked hat. The only way to prevent great forest fires is to set them on fire every year which would consume the dead leaves and small underbrush. A small fire every year would not injure the larger trees, but a great fire once in ten or twenty years destroys all."

[On the grounds of the Editor, a railroad runs through a piece of forest. It burns over from locomotive sparks every spring when the thaw comes. Frost seems to have the power of forcing out gummy material from dead vegetation, which easily catches fire. No injury has ever been known to the forest trees from these annual fires.—Ed. G. M.]

HARD AND SOFT MAPLES.—"Dasycarpum" says: "While crossing the Alleghenies en route to the Florists' Convention in August, the conversation turned upon shade trees, and among them maples; and as there appeared to be some ambiguity as to whether the Red Maple was hard wooded, it would be of value perhaps for you to elucidate this point for the benefit of the public. I also find the same uncertainty in regard to the Cottonwood and the Carolina Poplar, some claiming that they are identical and others the reverse."

[Soft Maple is generally understood to be the common Silver Maple—*Acer dasycarpum*. Hard Maple is given to *Acer rubrum*, the Red Maple, and to *Acer saccharinum*, the Sugar Maple. No one ever knows for certain which one is being talked about, except after minute inquiry. We believe most people refer to the Red Maple when using the name Hard Maple.

The Cottonwood Poplar is *Populus Canadensis*, the Carolina Poplar, *Populus monilifera*; botanists are, however, by no means clear that they are not mere varieties of the same thing. But it is very important for cultivators to keep the varieties separate. The so-called Carolina Poplar is far superior to all others as a street tree.—Ed. G. M.]

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

BLOOMING OF THE SWEET-POTATO.

BY MR. H. W. RAVENEL.

One of your correspondents writes (October number of *GARDENERS' MONTHLY*): Did you ever see a sweet potato bloom? As largely as we plant them in the South I have never seen but one, and I made a picture of it."

You do not state the locality from which your

correspondent writes, but I can say that in this latitude the sweet potato blooms abundantly every season—some varieties more freely than others. But as common as are the flowers, mature seed is extremely rare. The flower on casual inspection seems perfect,—the stigmas seem capable of performing their duties,—the stamens are there with their anthers, but in every case I have examined the latter are destitute of pollen. I suppose this is the defect. The flowers, however, in rare cases, do fertilize. I have heard of perfect and

mature seeds in this State, also Georgia and Florida; and I believe that some of numerous varieties have been raised from seed. I have reason to think also,—as you suggest in your comments,—that some owe their existence to bud or root variation. I have myself occasionally seen specimens which exhibited a well defined variation from others taken from the same vine.

A few years ago I inserted in one of our local papers an inquiry about the seeding of the sweet potato, and requested the farmers around to look into the matter and examine their potato fields. In the fall, some were brought in which had well developed capsules, and apparently perfect seeds. I also found some in my own potato patch, but though these were all planted carefully the following spring, they failed to germinate. I sent some of these seeds to the Editor of the *Rural New Yorker*, but as I never heard anything more of them, I presume they failed also. One of our neighboring farmers two years ago brought me some specimens of a potato which was confidently believed to be a seedling, as it was found growing alone where no vines or roots had ever been cultivated, and which came up as a seedling would do, feebly at first, and strongly resembling the common Morning Glory. I have cultivated it for two years. It seems unlike any of the varieties in cultivation here. The vine, though very luxuriant, seems not disposed to run, but rather to grow thickly in bunches over the ground. It is early and very productive—flesh and skin white, of oval shape and attains a large size, but it is insipid and without sweetness or flavor, not even improving by keeping through the winter. It will probably on this account, not meet with general favor.

The sweet potato begins to bloom here about the end of August or early in September, and continues till frost. Imperfect capsules may be seen every year after the flowers bud. They resemble very much those of the Morning Glory.

Aiken, South Carolina.

Mr. Hillenmeyer, Lexington, Ky., kindly contributes the following additional note: "Flowers on this plant are, as your Southern correspondent observes, quite rare. In the autumn of 1883, however, they were frequently found in this locality. July, August and September to the 16th, were quite dry; from that date out, through the month of October the temperature was high with frequent showers. The vines made a strong second growth, the tubers kept poorly, but flowers were quite abundant.

WILD FLOWERS OF THE ADIRONDACKS.

BY THOMAS BENNETT.

After a sojourn of nearly three months in the great Adirondack wilderness, N. Y. State, I find myself at home again, much improved in health, and on looking over my notes I have thought a few remarks and suggestions on what I have seen would not be uninteresting to you and your numerous readers.

You tell us a good deal about forestry and about cultivated beauties, and while you introduce to our notice these "gems of nature" you have not forgotten the "wayside flowers." The flora of this high table land is peculiar and interesting, and it is surprising that but few seem to take any great interest in it. The invalid goes there to regain his health, which he generally does (I speak from experience), in that cool, bracing and salubrious climate. The sportsman goes there with his rod and gun, longing for a chance to exert his skill, dreaming of long strings of fish abstracted from the waters of these numerous lakes, or of successfully shooting the wild bear or the timid deer. But whoever moves over these placid waters cannot help admiring the rural beauty of those lofty hills surrounding the lakes which are wooded to their very tops, covered with the most beautiful and luxuriant foliage and which gradually slope in a dense mass down to the water's edge.

In this communication I confine myself to a mere outline of the vegetation with the few remarks I wish to make. The evergreens by far outnumber the deciduous trees, and the giant size of the former in some instances is very striking. Here we are told are over ten thousand square miles of wood and water, which would take a long time to inspect thoroughly. I stopped the most of my time on the Forked and Raquette lakes, principally the latter, which are centrally located in the great forest, and I took occasion to visit the outlines from nearly every point of the compass. The Raquette is said to be over 100 miles in circuit.

There is an apparent sameness in the trees and vegetation generally, yet there are localities where one sort gains the ascendancy over others, but not to their exclusion altogether. I took notes of all the species I met, and at some other time may furnish them. The lack of tall creepers and thorny plants is a striking feature of this place; another is, the prevalence of red berries or fruit over other kinds. Red forms a pleasing contrast

with green, and Nature, seemingly aware of this, will not allow many shrubs or plants here that do not bear red fruit or berries.

This seems the home of the red raspberry (*Rubus*), but I could not determine the species; they grow very fine in this old wood soil. [*R. strigosus*—Ed.] The wild cherry (*Cerasus*) as a shrub has none but red, and the Elder (*Sambucus*) is loaded with a profusion of red berries. The dwarf Cornell that a short time before covered the ground with its white blossoms, now adorns the surface with its beautiful clusters of red "bunch berries." The beautiful *Viburnum lantanoides*, everywhere present, shows its fruit in August in large bunches or clusters of red berries. The Creeping Arum (*Calla palustris*), common in low grounds, is covered, when its white lilies decay, with beautiful bunches of red berries. The tall *Smilacina* (False Solomon's Seal) exhibits at every turn very large bunches of red berries; the Wake Robin (*Trillium*), shows a very large red berry or seed-pod; the *Prinos* or Winter-berry, the Shad-bush (*Amalanchier*), and many others exhibit their beautiful red fruit in great profusion. The wild plum is also red. Three species of *Aralia* grow here, and the *Nudicaulis* or *Sarsaparilla* in great abundance. The *Coptis*, or Golden Thread, so much used in medicine, is very plenty. Many other medicinal plants and herbs are plenty.

The ground is covered in most places at all seasons with most beautiful winter-greens and herbaceous creepers. Amongst the former *Pyrola*, *Chimaphila* and *Gaultheria* predominate. Amongst the latter *Chiogenes*, or Creeping Snowberry, grows everywhere on mossy banks; also the *Mitchella* (Partridge berry), and *Linnæa borealis*, the last of which ever reminds us of that great man, Carl Von Linnæus, who has done so much for botanical science. The *Cypripediums* and four species of club moss, with two *Selaginellas*, are very common. The American Pitcher Plant, Hunter's Cup, or Side-saddle flower (*Sarracenia*), grows in the swamps. The Indian pipe (*Monotropa*) often peeps out, as it were, to greet the passer by. I found no land in a state of nature without its due amount of vegetation. The deepest swamps are everywhere covered with a species of *Andromeda* (here called Sage-brush). The large beds of *Uvularia perfoliata* (yellow Bell-wort), so like beds of Lily of the Valley in appearance, are very interesting, and I do not see why they are not generally cultivated, and they are well adapted to grow in the shade.

The beautiful Orchis, *Habenaria orbiculata*, is often met with, and I have thought what a pity it is that a collection of these native plants and flowers, with thousands of others that might be collected throughout the country, are not brought and sown and planted in Central Park, New York, where the teacher of botany might bring his pupils at different times and show them the living specimens, and where others interested might also learn.

Would not this prepare the way for many of our farmers to go into raising medicinal plants, now so much called for, and which have to be imported from foreign countries, and moreover are now very strongly recommended to their notice by our present Commissioner of Agriculture? Some may object and say the soil is not suitable. It is not, for many sorts, it is true, but it is easy to make a similar soil that will answer every purpose by hauling a few sloop loads of peaty soil from the Jersey flats between New York and Newark, and when found too heavy by adding a little sand. I am convinced that not only the plants of the Adirondacks but thousands of others that can be easily procured may be grown in Central Park, New York, and I would respectfully suggest a similar establishment in all the large cities of our central States. *Chambersburg, near Trenton, N. J.*

THE MANGROVE.

BY R. SMITH.

The Mangrove (Botanical Order, *Rhizophoraceæ*) is one of nature's most interesting and wonderful products. There are about twenty species of the Mangrove, all of which are natives of the tropics. It flourishes on the seacoasts, and mud-flats along the estuaries and at the mouths of large rivers. In these places, its netted, intertwining roots often form impassible barriers to the bold explorer who attempts to invade, either by land or water, the dark shadows of its abode.

Most of the species (like the Banyan, *Ficus Indica*), send down auxiliary stems or roots from their branches, and when fairly established, spread with great rapidity, by means of these secondary roots, along the oozy river-banks, and form dense, dark, loathsome forests, among whose endless interlacings huge purple and black crabs, slimy, sleepy alligators, and aquatic birds disport and hunt their prey. The leaves are dark, glossy green. The wood is hard and durable, but of no commercial value. The seeds are enclosed in a pod, and begin to grow while still attached to the

parent. The thick radicle grows downward, the young cotyledons or seed-leaves push forth their heads, and about ten days after the seeds begin to germinate, the fruit, with the young Mangrove attached, falls into the muddy receptacle prepared by Nature, startling with its splash innumerable birds, which shriek and wail as they whirl away through the gloom, and attract to the spot some voracious alligator on the lookout for a victim.

When the tide covers the roots, few landscapes can be seen more depressing and weird than when sailing in a small boat among the mazes, and under the numberless leafy arches of a Mangrove forest. The voyager who ventures within the labyrinth, must use the greatest care, or the bottom of his boat may be torn out by a twisted, gnarled root, and leave him at the mercy of the alligator, whose savage eyes follow his every movement.

When the tide recedes, a sickly odor rises from the slime, bearing malaria in its breath, and threatening the intrepid mariner with delirium and death. The natives of the countries where the Mangrove grows, attribute all kinds of diseases to the odor rising from its roots; but there can be no doubt, that while ever growing where the dread malaria lurks, the Mangrove forest helps to sweeten the air and lessen the death-dealing power of the malarial vapor rising from the mud in which it delights to flourish.

The Rev. C. Kingsley, in "Westward Ho!" thus graphically and truthfully paints a Mangrove forest:

"The shore sank suddenly into a low line of Mangrove wood, backed by primeval forest. The loathy floor of liquid mud lay bare beneath. Upon the endless web of interarching roots, great purple crabs were crawling up and down. The black bank of dingy leathern leaves above; the endless labyrinth of stones and withes—for every bough had lowered its own living cord, to take fresh hold of the foul soil below; the web of roots which stretched far away inland—all seemed one horrid complicated trap for the voyager. There was no opening, no relief; nothing but the dark ring of Mangroves, and here and there an isolated group of large and small, parents and children, bending and spreading, as if in hideous haste to choke out air and sky. Wailing sadly, sad-colored Mangrove-hens ran off across the mud into the dreary dark. The hoarse night-raven, hid among the roots, startled the voyagers

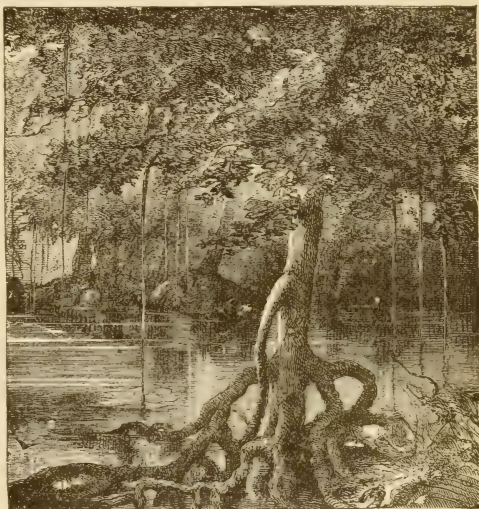
with a sudden shout, and then all was again silent as the grave. The loathly alligators, lounging in the slime, lifted their horny eyelids lazily, and leered upon you as you passed with stupid savageness. Lines of tall herons stood dimly in the growing gloom, like white fantastic ghosts. All was foul, sullen, weird as witches' dream."

Such is the Mangrove forest;

"A pillared shade
Upon whose grassless floor . . . ghostly shapes
May meet at noontide—Fear and trembling Hope,
Silence and Foresight—Death the skeleton,
And Time the shadow,"

—WORDSWORTH.

Germantown, Philadelphia.



A Mangrove Forest.

EDITORIAL NOTES.

BACTERIA IN THEIR RELATION TO DISEASE.—Prof. Burrill in a recent lecture at Chautauqua, contends that it is fully demonstrated that Bacteria cause disease and are not the product thereof. We hardly know in what way this has been demonstrated. The germs of these low orders of vegetation exist everywhere; this is conceded. They germinate when the circumstances are favorable; this also is conceded. To say that they cause disease is to say that they create the conditions under which they vegetate, and this is not philosophical. Still if it is "demonstrated" that this is a fact, there could be no opposition to the accep-

tance of the belief. Inoculation of a healthy subject is not demonstration, as some tissue is injured by the act, and this injured tissue may be sufficient to start the foe. If any other demonstration has been offered, it has not come under the notice of the Editor. That fungous growth, after it has once started, will destroy tissue, has been demonstrated, but the conditions that give it the first start have not been made so clear.

HUMBLE BEES AND CLOVER.—The *American Horticulturist* says that "Prof. Shelton, of the Kansas Agricultural College, remarked some time since, that in 'Kansas bumble bees are almost unknown. It is safe to say that not one clover head in a dozen ever knows the embrace of the bumble bees; and yet we believe that nowhere are such crops of clover seed grown as in this State. Here every clover head which is allowed to come to maturity is every year filled with seed of the best quality. Certainly our clover worries along very handsomely without bumble bees.'"

This accords with the experience of Mr. Meehan, who, at the time when Mr. Darwin attempted to show that clover could not seed without humble bees, pointed out that in America, humble bees did not enter by the fertilizing door, but slit the tube of the clover flower near its base, and carried off the honey without meddling with the anthers at all. They rather assisted by jarring the flowers, in scattering the flower's own pollen within the corolla, and hence favored self-fertilization rather than crossing with others.

SHORTIA GALACIFOLIA.—Our readers will remember how much interest has been felt in this curious plant, which was found by Michaux in North Carolina, and never again till a few plants were seen in another place by Mr. Hyams a few years ago. Now Prof. Sargent has discovered it on the original spot where it grew in Michaux's time. It is one of the plants common to Japan and to our country, that seem to be dying out; and yet individual plants seem able to hold their own. Here are plants that have been able to maintain their place in one spot for over half a century.

DISAPPEARANCE OF THE MISTLETOE.—A few years ago, says Mr. Hillenmeyer of Lexington, hardly a walnut tree in Fayette Co., Ky., but was full of Mistletoe. To-day a cluster of this plant is quite rare. A careful examination last winter of nearly fifty acres of walnut woodland, failed to discover a single cluster. In 1877 many trees in this same tract were literally overgrown with this plant. Why has it disappeared?

SOLIDIFICATION OF OXYGEN was exhibited for the first time at the Royal Institution, a few days since, by Professor Dewar. The solidification is accomplished by allowing liquid oxygen to expand into a partial vacuum, when the enormous absorption of heat that follows results in the production of the solid substance. Oxygen in a solid condition resembles snow in appearance, and has a temperature of about 200 deg. Centigrade below the freezing point of water.—*Gardeners' Magazine*.

PURLANE.—The Germans, in olden time, were fond of this as a vegetable, and tradition says that its presence as a weed in our country is due to its escape from German-Pennsylvania gardens. We fancy it would have found its way here to plague the cultivator, if it had not come in the emigrant's track. Boiled till tender, and then sauced, it is said to be excellent eating; but to enjoy it thoroughly, the *American Agriculturist* suggests that it should be called by its French name "pourpier Vert," and not by the vulgar name of "pussley."

SUGAR IN OAK TREES.—During August, the attention of the writer was attracted by a stream of liquid that had oozed down the trunk of a twenty-year oak, and around which bees and butterflies were hovering in great numbers. The sap came from orifices made by borers, and was quite as sweet as that which is produced by the Sugar maple.

THE SPIDER LILY.—Mr. Berckmans says that the Guernsey Lily, and the American crinum, *C. americanum*, are known by this name in some parts of the South.

FERTILIZING FLOWERS BY INSECTS.—Those who have written of this curious subject, the agency of insects in the cross-fertilization of flowers, love to tell of the mutual interests involved. The insects want honey—flowers want foreign pollen—so the plant receives the bee as a welcome foreign trader. It receives the needed pollen, and gladdens the heart of the busy little merchant, who departs laden with the treasures for which the flower had no use of its own. But in the little world of plants and flowers, as in the wider intercourse among human beings, mutual interest is not always the basis of change. There are wretched instances of ignoble selfishness that set all moral law at defiance—plants that are worse than cannibals, for they not only actually kill and eat the little traders that venture within their domains, but have not the higher motives outside of mere love of a delicacy, which Seemann tells us the Fiji Islanders have, when

tempted to dine on their celebrated dish of roast missionary. Among the many instances illustrative of this barbaric trait in plants, that have appeared in print, a very interesting one has recently been contributed by an English observer, Mr. A. D. Webster. It relates to *Arum crinitum*, an old and well-known Corsican plant, though in modern times it has been given the dreadful name of *Helicodiceros muscivorus*, the last, of course, in reference to its fly-devouring propensity. It is closely allied to the well-known Indian turnip, of our woods, but has a fetid odor similar to the skunk-cabbage, to which it also has relationship. Mr. Webster says the carrion-like scent is very attractive to a large number of flies, which enter the spathe, but never return. After being open for two days, he has found as many as seventy-two captives, without counting the smaller creatures. With a pre-disposition to believe that the insects were destined to act as agents in fertilization, he was amazed to find that the pollen was not in a condition for use, till after the captured insects were dead. These he found, lived long enough to deposit eggs, which, by the time the pollen matured had become little "wrigglers," which, crawling about the spadix, carried the pollen from male to the female flowers. It is not yet quite clear, whether the flower acts from pure viciousness in this murderous course—in charity, we may suppose the selfishness already hinted at, and believe that in some way the nitrogenous material of the insects is used as food, as in the case of pitcher plants and Venus' fly-traps. Mr. W. charitably looks on the "wrigglers" as fertilizing agents, and that the parents were captured that this good might come. But as this is not cross-fertilization, and the stamens in these aroids being usually above the pistils, so that the pollen when discharged would naturally fall on the stigmas below them, there would really seem no excuse for this murderous waste of life by an innocent-looking flower.—*Independent*.

THE LADIES' BEE.—There is not much doubt that many people would engage in bee-keeping but for one thing—viz.: the little bee's weapon of defence—its sting. Some people do not much care whether they are stung or not, but with others it is not so, and in certain conditions of the blood a sting cannot altogether be despised. Under these circumstances, it seems desirable to inquire whether some bees are more peaceably disposed than others. The ordinary English bee is generally tolerably well-behaved, but not always

so, and is occasionally perfectly furious, especially if the wind is "beasterly." The Italian or Ligurian bee is good-tempered if kept pure, but that is very difficult, and when they are crossed with English bees they become perfect little demons, and will fly, not only at the intruder, but oftener still at innocent people at a distance. Moreover—and here I am aware I am treading on delicate ground—I do not feel sure that the Italian bees are altogether innocent about the introduction of foul brood and other bee diseases into this country. But I will pursue this part of the subject no further, out of deference to our most noted bee-keepers, many of whom hold the contrary opinion.

It is now generally conceded that the Carniolan bee is the best bee for this country, and therefore it seems to be the ladies' bee. This bee is an importation from Carniola, in Austria. It is a most amiable bee, and nothing seems to put it out of temper. Almost anything can be done with them, and this without smoke or veil. Moreover, if they become crossed with ours, as they are sure to be, the queen bee not being at all particular about the nationality of her husband, the good qualities seem to be increased rather than diminished. In a pure state, their only fault seems to be a perpetual desire to swarm, and that quality seems to be restrained somewhat when crossed with ours, while the amiable qualities are retained. They are very energetic, and collect a large amount of honey, and our climate seems to suit them well; but the Italians appear to want a warmer climate than ours, and are more adapted for sunny Italy.

Many other races of bees have been introduced, and as close breeding is not good, they may, and probably have, improved the blood of our bees generally, but they are much too fierce for general use. Especially may this be said of the Cyprian, Syrian, and Holy Land bees. I have many times wondered how King Solomon (who said, "My son, eat thou honey, for it is good") managed to get his, and whether he ever was stung.—*Agnes, in Gardeners' Chronicle*.

FLOATING ISLANDS.—The Editor of the *GARDENERS' MONTHLY* in his younger days when an active plant collector, was surprised once, on returning the way he came through a piece of woods, to find a sheet of water across his path. He was on a floating island, and the wind had changed. It was evident to his mind that he had found one explanation of sunken forests, aside from any violent convulsion of the earth's surface—when the woods had received blowing

sands to add to the weight, sinking would be inevitable.

The subject is worthy of more thought than it has received from scientific people. Here is another account:

"Writing of the mountain lakes in Wayne County, Pa., one of which, he says, has at times a distinct tidal movement, though 1500 feet above the ocean level, a correspondent of the *New York Times* says: 'Cajah Pond, one mile and a half from the county seat and about 200 feet above the village, is dotted with a number of little islands. These islands are covered with trees, some of them 20 feet high, and a dense growth of thick-foliaged bushes. The island bottoms are marshy, but the soil is stiff enough to sustain the weight of the fishermen who troll for pickerel from the islands in the summer fishing season, and who are the only visitors. In the summer these miniature islands are pleasing variations in the beauty of the scene the lake presents to the spectator as he gazes upon it from the high ground that encircles it, and if the wind happens to be strong and variable, as it generally is on the lake, the visitor who looks upon the little sheet for the first time can hardly help being startled to see these islands moving about from one point of the compass to another as the wind shifts. On one day these islands may be seen huddled together in one spot, and on another day perhaps they will be seen scattered widely apart. An island from which the fisherman casts his line at one end of the lake to-day will in all probability invite him to it from the other extremity to-morrow. The largest of these islands was years ago partial to the lower end of the lake, and hugged the shore there with only slight changes in position day in and day out. During a stiff and heavy wind one day this island tacked first to one side and then to the other side of the lake, moving slowly the while toward the upper end, until it was floated against the shore at that end, where it has remained ever since, moored in some mysterious way to the marshy margin of the mainland. These fair islands of Cajah Pond, although almost continually shifting their position, are not so susceptible to the influences of the wind as they were within the memory of persons born within the present generation. Their area is perceptibly increasing. Apparently the roots of the trees and undergrowth have thrust themselves down deep enough to act as anchors to these curious natural craft. The writer has never heard any scientific explanation of the processes by which these formations are being slowly but surely augmented and made more solid, but by these processes, whatsoever they are, the entire surface of the lake will eventually be covered with this slowly collected soil, until no evidence will remain that a lake ever existed on the spot.'"

SCRAPS AND QUERIES.

FOOD OF THE ENGLISH SPARROW.—"B., Williamsport, Pa.: The English sparrow is properly a

graminivorous bird. But it has a warm place for moths and beetles, and in so far it is an aid in keeping down these pests of the cultivator. Whether it is a greater friend than an enemy of the farmer and fruit-grower, is a good one for a debating society, because it can never be definitely answered. The citizen who has had his trees cleared of the measuring worm, or his elms of the leaf beetle, will speak by the hour loudly in their praise; while the lungs of the poor fellow who has lost all his crop of some desirable seeds, or perhaps his little strawberry crop by them, will be exercised with equal strength in crying them down.

THE ROSE RUST.—"A subscriber to the *GARDENERS' MONTHLY*" writes: "The foliage of my Hybrid Perpetual roses has been very much injured by a rust, which you will see on the underside of the leaf enclosed. They have blossomed well, but dropped their leaves early. I have thought the difficulty might be owing to a very dry summer. Can you suggest a remedy for the trouble, should it appear next year."

[This is a distinct species of fungus from that which produces rust on the blackberry and other plants, and is known to botanists as *Phragmidium mucronatum*. It is not likely that it will appear so badly, if at all, next year, as, like all the fungus family, it requires a nice combination of conditions for them to appear. This season being favorable, it is not likely the next will be favorable also. A wash of soap suds and sulphur has been found useful in preventing its spread when it begins to appear.

This form is by no means common, and if you would send a good quantity for herbarium specimens this year; or next, if too late for this, to Mr. J. B. Ellis, Newfield, New Jersey, with your full address, he would be very much obliged for them.—Ed. G. M.]

ACCLIMATING TREES AND FRUITS.—A correspondent from Switzerland, St. John's County, Florida, sends us clippings from the *Florida Dispatch* and other papers, and says: "Can you give me any facts, going to show that any plant, native of a hot climate, has become acclimated in a cold climate, or vice versa?"

The extracts read:

"I visited an old-time friend, Samuel Bowers, at Cedar Rapids, Iowa; he has been in the nursery business thirty-five years. His fine orchard, that had been his pride for years, all torn to pieces by the cold the winter before, and much of his stock in nursery seemed, even the Wealthys, frozen half-way to the ground.

"Then one hundred miles further on, is Dudley

W. Adams, a man who has done more for that country, in the way of pomology, than any other man in the Northwest, his fine orchard of eighty acres, hardly a tree left, and so I found it in all that country, turn which way I would. The sad disaster, nothing left but dead trees, with but few exceptions, a Duchess, Wealthy and a few sour crab apples (and often these kinds were dead), were all that were left, and as I have said before this, Iowa lost by frost that winter many times more than our State did by the freeze of last winter."

The next extract reads :

"I think Mr. Mott is mistaken, when he asserts that there is no such thing as acclimating a plant. Only a few years ago, apples could not be successfully grown in Minnesota; thousands of trees of the hardiest varieties then known had been sent out, yet almost all froze out before reaching a bearing age. In the face of all this discouragement, courageous orchardists persevered in growing seedlings, until they have achieved success; and to-day there are thousands of bearing apple trees in Minnesota, although neither the soil nor the climate has changed. If this is not acclimation, what is it? I could give other instances, if space would permit."

A succeeding paper produces a correspondent who says :

"I wonder about how much Mr. Tabor knows about 'acclimating' apples in Minnesota; about how much he knows about apple-raising in that State, anyway. If he knows anything about it at all, he knows that ten, fifteen, yes twenty years ago, there was less trouble to grow apples in that State, than it has been for the past three years. He knows too, of the seedlings produced up there, none of them have been any more hardy to withstand their terrible winters than the parent apple.

"The Wealthy, a seedling of the Oldenburgh (a Persian apple), proved itself nearly as hardy as its parent, and in it, Mr. Gidings gave to that country a valuable acquisition.

"Then there are seedlings from the Siberian crab-apple family, that some have proved themselves of value, but usually they die with frozen sap blight."

It is extremely difficult to answer the question put to us, because no one has any definite idea of what acclimate means. In a general sense, it signifies that a plant shall live and thrive in a country wherein it is not indigenous. There are innumerable conditions besides those which would come under the head of climate, that would affect the result. As the question is put by our correspondent, acclimate seems reduced to a question of temperature. Can a plant, a native of a hot clime, be made to endure a colder one?

We never knew a potato that a white frost would not kill; and it does seem to us, that we shall never have a potato that a white frost will not kill. We do not think that any amount of selection would ever give us a frost-proof potato. And yet as regards trees, it is undoubted that some varieties are harder than others. In rows of varieties of apples in nurseries, some kinds will have every tree injured, while other kinds will not have one tree injured. We should have to decide that trees native to comparatively mild regions, might produce varieties that would prove harder in a cool country than the original variety; though we should not be disposed to think this elasticity extended over a very wide range of temperature.

LITERATURE, TRAVELS AND PERSONAL NOTES.

EDITORIAL NOTES.

GETTING ADDITIONAL SUBSCRIBERS FOR THE GARDENERS' MONTHLY.—As stated in our last, the extraordinary circulation the GARDENERS' MONTHLY has achieved in the past, has been almost wholly due to the good will of its friends, who love to hunt up one or two subscribers to send with their own subscriptions. Lovers of gardening are so scattered that ordinary advertising will not reach them. The publisher hands us the enclosed letter from a Canadian subscriber, for which he begs to return his sincere thanks:

"'Gardening is all a labor of love,' as you put it in your very appropriate address to the florists, re-

ported in the last number. I should have very much liked to have been there personally. I am not acquainted with you, yet we all seem to be of one family—the MONTHLY as a kind of binding influence. There are high and low degrees in the family; I am willing to take the lowest place, yet, all men after our own heart. The family extends a long way, but there seems to be a love for each other. I have had several numbers of other papers sent to me as samples to subscribe to, but I find none to come up to my own good old MONTHLY. I am an Englishman; it is said they like anything old or ancient. Well, I have known the MONTHLY now for some sixteen years and I have no evil report to give of it. As the years pass it becomes to me more valued, because it has done me good. I will call it my friend. I will try and do my best towards getting some new subscribers. J. B."

THE STANDING OF NURSERYMEN.—American nurserymen can scarcely understand why English nurserymen complain so badly about being over-rated. American nurserymen do not think it possible to be over-rated—indeed they like to have people think as well of them as possible. But they sometimes think they are over-taxed, and perhaps this is what their English brethren mean.

DESTROYING A NEIGHBOR'S TRADE.—A funny paper has the following :

"What's the price of sausages?" "Dwenty cents a bound." "You asked twenty-five this morning." "Yes; dot vas ven I had some. Now I aint got none I sells for dwenty cents. Dot makes me a rebutation for selling cheap, and I don't lose noddings."

This seems too ridiculous to have a foundation in fact, but such a circumstance was once brought to our attention. A new grape was once famous, and selling freely at \$2 a plant. A country dealer managed to secure 100 for \$100, and ventured to advertise and push them in a certain locality. A jealous rival bought half a dozen for \$9 and advertised them under his rival's card, at 50 cents each. Of course they all went in a few days, and he had no more to sell; but it had the effect of making his rival look like being a very dear place to go to when he was asking \$2 for what others were willing to sell for 50 cents.

TYPE WRITERS.—And now a shout against type writers arises in the land. A correspondent of the *Floral Cabinet* is opposed to them except, "whenever it may be necessary to send off large quantities of explanatory letters accounting for the nonfulfillment of the promises held out by the catalogues. In some establishments the work in this department is simply enormous."

SELLING RARE SEEDS.—It has long been charged that when some seedsmen have but a limited supply of expensive seeds, they get cheap kinds that resemble them, roast them to prevent germination, and consequent detection, and then mix with the rare kind. The grower is surprised at the liberality that gives so much for the money, and generally attributes the slender crop, to anything than the real cause. An Australian correspondent of the *Gardeners' Chronicle*, stated that the seed trade of that country was fast passing into American firms, because of the prevalence of this trick among English houses. Messrs. James Carter & Co., of London, write indignantly in reply, and challenge the New Zealander to produce a single proof, and utterly repudiates the charge as against the London trade.

WEEDS.—How to define a weed continues to be a subject of discussion in magazines and newspapers. It seems to us a very simple matter. It is a term having a relation to cultivation and nothing more. The prettiest wild flower is a weed when it springs up where man does not want it. A wild carrot is a weed when it springs up in our pansy beds, or fields of Indian corn,—but when it grows in wild uncultivated places it is as much a pretty wild flower as anything else. If there were no gardens or farms there would be no weeds. A weed, therefore, is simply a plant which grows where the good cultivator does not want it,—it is a plant out of place.

THOSE APPLES IN PARADISE.—It is now contended by those versed in ancient languages that the "apple" of the poets in their visions of paradise need not have been our modern apple, nor need the "serpent" be one of those dreadful creatures that modern humanity everywhere despises. It was some good fruit, and some wily creature, and this is enough. It is a pity that the older poets have not had much patronage from modern readers; and in the belief that with all the talk about Adam's early experiences in the apple orchard few of our younger people are familiar with Milton's dream of it, we give the interview of the serpent with Eve :

"Empress of this fair world, resplendent Eve,
I was at first as other beasts that graze
The trodden herb, of abject thoughts and low
As was my food; nor aught but food discerned
Till on a day, roving the field, I chanced
A goodly tree far distant to behold
Laden with fruit of fairest colors mixed
Ruddy and gold: I nearer drew to gaze;
When from the boughs a savory odor blown,
Grateful to appetite, more pleased my sense
Than smell of sweetest fennel.
To satisfy the shrewd desire I had
Of tasting those fair apples, I resolved
Not to defer; Hunger and thirst at once
Powerful persuaders, quickened at the scent
Of that alluring fruit, urged me so keen,
Tempting so high to pluck and eat my fill,
I spared not; for such pleasure till that hour,
At feed or fountain never had I found,—
To whom Eve, yet more amazed, unwary thus replied:
'Serpent, thy overpraising leaves in doubt
The virtue of that fruit, in thee first proved:
Where grows the tree? from hence how far?
For many are the trees of God that grow
In Paradise: and various, yet unknown
To us in such abundance lies our choice,
As leaves a greater store of fruit untouched,
Still hanging uncorruptible, till men
Grow to their provision, and more hands
Help to disburden nature of her birth.'"

THE FORGET-ME-NOT.—The *Gardeners' Magazine* tells us that—

"The flower which we now call the 'Forget-me-not' (a name which originally appertained to the Speedwell) has become inseparably connected with the flower, borne on the wings of the following poetic legend: A knight and his lady-love, who were on the eve of being united, whilst strolling on the bank of the blue Danube, saw a spray of these pretty flowers floating on the waters, which seemed ready to carry it away. The af-

fianced bride admired the delicate beauty of the flowers, and regretted their fatal destiny. At this point, the lover did not hesitate to plunge into the stream. He soon secured the flowers, but the current was too strong for him, and as it bore him past his despairing mistress, he flung the fatal flowers on the bank, exclaiming, as he swept to his doom, '*Vergiss mich nicht.*'

"And the lady fair of the knight so true,
Ave remembered his hapless lot;
And she cherished the flower of brilliant hue,
And braided her hair with the blossoms blue,
And she called it Forget-me-not."

A recent writer remarks that possibly the story of the origin of the Forget-me-not's sentimental designation may have been in the mind of the Princess Marie, of Baden, that winter day, when, strolling along the banks of the Rhine with her cousin, Louis Napoleon, she inveighed against the degeneracy of modern gallants, vowing they were incapable of emulating the devotion to beauty that characterizes the cavaliers of olden times. As they lingered on causeway-dykes, where the Neckar joins the Rhine, a sudden gust of wind carried away a flower from the hair of the princess, and sent it into the rushing waters. "There!" she exclaimed, 'that would be an opportunity for a cavalier of the olden days to show his devotion.' 'That's a challenge, cousin,' retorted Louis Napoleon, and in a second he was battling with the rough waters. He disappeared and reappeared to disappear and reappear again and again, but at length reached the shore safe and sound with his cousin's flower in his hand. 'Take it, Marie,' said he, as he shook himself; 'but never again talk to me of your cavalier of the olden time.'

"The Italians call the *Myosotis*, *Nontiscordar di me*, and in one of their ballads represent the flower as the embodiment of the spirit of a young girl who was drowned, and transformed into the *Myosotis* growing by the river's banks. According to some investigators, the Forget-me-not is the Sun-flower of the classics—the flower into which poor Clytie was metamorphosed—the pale blossom which, says Ovid, held firmly by the root, still turns to the sun she loves. There is rather a ghastly legend connected with the Forget-me-not which narrates that after the battle of Waterloo an immense quantity of these flowers sprang up on different parts of that sanguinary field, the soil of which had been enriched by the blood of heroes."

All this is poetry, but we know of some very cold prose connected with the flower. An English gentleman gave his gardener the privilege of showing visitors through the beautiful grounds, and permitted him to take any largess that might be given him freely, but on no account was he to ask or hint that such feeling was expected. He simply planted a bed of these pretty flowers near the place of exit, and when, after giving his visitors the names of every thing on the place, if they were about to depart without his customary tip, with a remarkably impressive fingering he would whisper, "and that flower is the Forget-me-not, ma'am."

THE ACACIA AT MASONIC FUNERALS.—I regret the neglect in not acceding to your request earlier, to give the particulars I promised upon this interesting subject. I may say that I had prepared an article on the subject, which proved too lengthy through my having dipped freely into some voluminous notes on funeral trees; this portion I have now considered to send you on some future occasion, which, if you think worthy of your columns, you can then print. The custom of planting an Acacia or sprig of that tree on a grave, amongst the Hebrews, arose from the following circumstances. According to the Jewish law, no dead bodies were allowed to be buried within the walls of their cities. The priests were forbidden to cross a grave, and the Jews always avoided doing so, from a fear or belief that some evil would happen; they therefore placed a branch or sprig of Acacia, to mark the spot where a dead body was interred, and as the species called *A. nilotica*, grew profusely about Jerusalem this plant was largely adopted, and is the true species required at the interment of a departed brother by the Freemasons, whose rites and ceremonies are of Hebraic origin. This species of Acacia—which requires a warmer climate than our own for its cultivation—must not be confounded with the totally different *Robinia Pseud-Acacia*, an American plant, introduced into Europe some 250 years ago by M. Jean Robin, nurseryman to the King of France, after whom it was named Robinia. It must have been introduced about the same time into this country, as Parkinson mentions it growing in England in 1640. Evelyn speaks of it in 1662. A few years ago there was an ancient Robinia in the old arboretum at Kew which had attained a circumference of some 13 feet. The *Acacia nilotica* and its allied species, *A. Arabica* and *A. Seyal* produce the gum arabic of commerce. *A. Seyal* yielded the Shittah, or Shittim wood of the Bible used in the manufacture of the Ark of the Covenant, as well as the furniture for the Tabernacle. The name Acacia is derived from the Greek—*a*, negative; and *kakos*, evil, signifying free from evil, innocent or incorruptible, probably from the wood which was considered incorruptible. Pliny describes it as incorruptible and durable in water, therefore useful for the sides of ships—"Quoniam incorrupta etiam, in aquis durat ob id utilissima navium costis." (Pliny, lib. xiii., cap. 9.) Another purpose to which for ages the Acacia was applied was making coffins in Eastern countries, especially for the kings of Egypt, and probably

this was the same with Joseph, the first record extant of a body being placed in a coffin, or as an old Bible (A. D. 1580) in my possession, Genesis chap. 1: v. 26, says:—"They embalmed him and put him in a chest in Egypt."—*Gardeners' Chronicle*.

ORIGIN OF MOSS ROSES.—It is now nearly three hundred years ago since the old Provence or Cabbage rose was introduced; and that it, or its more recently raised representatives, should still find a place in our gardens is not to be wondered at, for all the varieties are deliciously fragrant, perfectly hardy, and mostly of moderate or dwarf growth. To thrive well they should be grown on their own roots, and they require rich soil and close pruning.

The Moss Rose, it is said, originated as a sport from the Provence rose (*C. centifolia*); it would appear to have sported abroad. Mr. Cranston states that it was introduced from Holland in 1596, but as to its origin no satisfactory account has been given. Some years ago, Mr. Henry Shailer, then of the Chapel Nursery, Battersea Fields, contributed to the *Gardener, Florist and Agriculturist*, an account of the first red Moss rose. He states that it was first sent over with some plants of Orange trees from the Italian States to Mr. Wrench, then at Broom House, Fulham. This, according to Mr. Shailer, was about the year 1735. It remained in that family nearly twenty years without being much noticed or circulated, until a nurseryman named Grey, of the Fulham Nursery, now Messrs. Osborn & Sons, brought it into note.

The White Moss.—The first production of the white Moss Rose, which took place in the year 1788, was from a sucker or underground shoot. Mr. Shailer states: "My father, Henry Shailer, nurseryman, of Little Chelsea, an extensive grower of Moss Roses (a fact which is set forth in Faulkner's "History of Chelsea"), perceiving it to be a *lusus nature* from a stool of the red Moss, cut it off and budded it on the White Provence, or Rose La Blanche Unique. The buds flowered the following season a pale blush; he budded them again the following season, and it became much whiter; it was then figured in Andrews' "Rosary" under the name of Shailer's White Moss. He then sold it at five guineas per plant, a price at which he continued to sell it for three years; he then entered into a contract for its sale with Messrs. Lee and Kennedy of Hammersmith, they taking as many plants as he could grow for three years at 20s. per plant, binding him not to sell to any one

else under ten guineas per plant. After cutting down the shoots which produced the White Moss, it threw up two weak shoots from which he budded. They flowered the second season from the buds; that was the birth of the striped Moss Rose, a beautiful and delicate variety; but when grown strongly apt to go back to the original parent. The first production of the single Moss Rose, 1807, was a sport of nature. My father sent some plants of Moss Roses down to a nurseryman of the name of Essex, at Colchester; on the receipt of a letter from that person I went with my father to see it when it was in bloom; I took some cuttings away with me to bud, and fetched the original plant away in the following autumn to our nursery at Little Chelsea; from there we sent out the first plants at five shillings each. On the first production of the old scarlet Moss Rose, which is a semi-double, it flowered on a plant given to his brother, Mr. F. Shailer, of Cook's Ground and Queen's Elm, Chelsea, 1808, nurseryman; the first production of the Moss De Meaux was from a sport of Nature from the old De Meaux, in the neighborhood of Bristol, but brought into a high state of perfection by the Messrs. Lee, of Hammersmith. In regard to the birth of the Sage-leaved Moss Rose, that I must claim myself—it was a sport of Nature. I discovered it on a Sunday afternoon in June, 1813. I sold the whole stock to Messrs. Lee. It is a delicate shell like form and a beautiful blush, now nearly extinct. As to the first known production of Rose La Blanche Unique or White Provence, it was discovered by Mr. Daniel Grimwood, of Little Chelsea, nurseryman. He was in Norfolk in July, 1775, and when riding leisurely along the road he perceived a Rose of great whiteness in a mill garden. He alighted, and on close inspection discovered it to be a Provence rose; he then paid a guinea to be allowed to cut a flower, and in cutting it he cut off three buds; he went to the first inn, packed it up, and sent it direct to my father, who was then his foreman, requesting him to bud it, which he did, and two of the buds grew. In the following autumn, he went down to the same place, when, for five guineas he brought the whole stock away; he then made an arrangement with my father to propagate it, allowing 5s. per plant for three years, at the expiration of which time he sold it out at one guinea per plant, my father's share amounting to upwards of £300. Mr. Grimwood sent the owner of the mill a superb silver tankard, &c., to the amount of £60. Lastly, comes the birth of

Shailer's Provence, or *Rosa gracilis*, so named by Messrs. Lee; it was raised from the seeds of the Spineless or Virgin's rose, sown by myself in 1799, and flowered in 1802. We raised numerous varieties from seed up to 1816, and generally sold them to Messrs. Lee, who sent them out under their own naming."

From this interesting account, we learn that the roses fetched much more money when sent out in those days than they do now. We also get information as to the origin of some of the choicer roses of those days.—*Gardening Illustrated*.

A GOLD MEDAL TO BARON MUELLER.—The Society of Acclimation of France has sent a gold medal to the well-known botanist of Melbourne, Australia, for the great value his services have been to France and Algeria, by the introduction of the Blue Gum trees, which his labors did so much to effect.

COL. WILDER'S EIGHTY-EIGHTH YEAR.—The adage that a prophet is not without honor, save in his own country, would seem not to apply to Col. Wilder, for he is honored at home as well as abroad. A dinner was given to him on the 22nd of September, commemorative of his 88th birthday, at which he gave one of his usual pleasant addresses. A local paper says: "It was the heartfelt wish of all present, that he might live to celebrate, not merely such another occasion with the troops of friends around him, but a continuous line of them to the line of a full century."

After all, Col. Wilder is not a prophet, for this is one who foretells what is to be in the future. His prophecies have been fulfilled, and he is now simply reaping the rewards of good deeds, if ever foretold, still happily accomplished.

PROF. C. V. RILEY.—Prof. C. V. Riley has returned from Europe much improved in health, and as full of useful work as ever.

JULES LACHAUME.—Horticultural visitors to the American Centennial remember the curious collection of Cuban plants exhibited by Mr. Lachaume, and indeed in one way or another he is well known to the horticulturists of the United States, as Director of the Garden of Acclimatization, at Havana. He has received for his distinguished services to horticulture the distinction of Knight of the Order of Isabella the Catholic.

LOUIS OTT.—This estimable gentleman is well-known in connection with the great success which has attended the culture of the grape in Virginia, in which he may be said to have been one of the

pioneers, for there was little success of much consequence till after the war for the Union. He settled in Virginia about the time of the breaking out of the struggle, and has, for years past, been residing at Castle Hill, in Nelson County, where he died. He was a native of Bavaria, his father being connected with the wine department of the King's household. Besides his practical knowledge of grape culture, he was a highly-educated gentleman, being well acquainted with most of the modern languages. At the time of his death he was one of the editors of the "Fruit and Grape-grower."

A. BRACKENRIDGE.—We note by the city papers of Baltimore, the death of Mr. A. Brackenridge, but have had no particulars. Mr. B. is the son of Mr. W. D. Brackenridge, well known to our readers. He was an enthusiastic lover of orchids, and very much of the revival of the taste which has made these curious flowers popular, has been due to his work in disseminating them.

ORIGIN OF CULTIVATED PLANTS (*Origine des Plantes Cultivées*). By Alphonse Decandolle. This work has proved so popular that this third edition has been issued to meet the demand. The author adds to this, six pages of additions and corrections to the former editions. In regard to the radish it is concluded difficult to believe that it came to us from China or western Asia. The Jerusalem Artichoke is believed to be a descendant in some degree of *Helianthus doronicoides*. In regard to the origin of the potato, Prof. de Candolle does not agree with Baker and Hooker that all the tuberous solanums, of South America, are of one species, and if they are, we are still without any knowledge of the origin of the variety—if we must not call it species—that gave us the potato pure and simple. "Changing a term in nomenclature," says M. de Candolle, "does not alter the main points of the question." The sweet potato is not indigenous to China, but its introduction to that country occurred in the sixteenth century. Purslane, supposed at one time to be an introduction from the old world, and which our weedy garden plant may have been, yet seems to have some claim to being also spontaneous in some portions of America. Lucerne is certainly spontaneous in the lower regions of the Volga; and Saintfoin is certainly spontaneous in Central Russia.

The Vetch was certainly cultivated in Hungary during the stone age. Chinese Tea is spontaneous in the Island of Hainan. Remains of Cloves have

been found in a box of the sixth century in the ruined castle of Horberg, showing that it was an article of commerce at this early date. The Hop is spontaneous in Japan and North America, as well as in Europe. Seed of the Cucumber are found in pre-historic ashes in Hungary. There is also evidence of the Lentil and the garden Pea, and common bean, *Faba vulgaris*, in the stone age remains of Hungary. The Chick Pea was known in China in the fourteenth century, though its Chinese name indicates a western origin. These are the chief additions to former knowledge.

CELERY AND ITS CULTIVATION.—By W. W. Ramson, 1886. This is a small pamphlet of 15 pages, evidently intended to present the merits of a new variety, Ramson's Early Arlington, for which it is claimed that it is "three weeks earlier than the old stand-by known as Boston Market. It blanches easily and quickly." This will be a good point with lovers of chicken salad, to whom chicken salad is no chicken salad unless veritable celery is an ingredient therein. The pamphlet is an excellent practical treatise on this vegetable. Mr. R. believes that, to be profitable, the cost of raising must be below \$4 per 100.

Mr. R. seems to doubt the existence of the larvæ of the celery fly, as a cause of injury to the plant. He believes that the insect is one of those that simply follow decaying matter. We do not know what is the insect that attacks the celery about Boston, but that there is a fearful pest that attacks perfectly healthy plants in some places, is as well known as that the rose slug attacks roses, or the Colorado beetle the potato.

CATALOGUES.—Anderson, H. S., Imported Stocks, Seeds, etc., Union Springs, N. Y.—Benand, E., Roses and Nursery Stocks, Orleans, France.—Berckmans, P. J., Fruits, Evergreens and Roses, Augusta, Ga.—Curwen, John, Jr., Plants, Bulbs, etc., Villa Nova, Pa.—Jongkindt Coninck, A. M. C., General Stock, Trees, Ferns, etc., Dedemsvaart, Netherlands.—Lorenz, Chr., Flowers, Seeds, etc., Erfurt, Germany.—Lovett, J. T., Fruits, Trees and Plants, Little Silver, N. J.—Meehan, Thomas, Ornamental Trees, Vines, Shrubs and Fruits, Germantown, Philadelphia, Pa.—Munson, T. V., Fruits, Small Fruits and Ornamental, Denison, Texas.—Welch Bros., Florists' Supplies, Boston, Mass.

SCRAPS AND QUERIES.

COMMON NAMES.—Dudley W. Adams remarks: "The Editor of the GARDENERS' MONTHLY says: 'And now we rise to remark that no one appreciates the desire of our correspondent more than

these same botanists and scientists. Numbers of them, among them Professor Asa Gray, have tried to send forth an English name along with the scientific name,' &c.

"Exactly! Another instance of the dense practical stupidity of scientific men. Prof. Gray made a book and gave strictly first-class scientific names suitable for very fine haired people only. Then he condescended to tack on a 'common' name adapted to the dull understandings of the Capilli brassi. We common plowjoggers will admit in private that we are inferior in intelligence and education, but it is not pleasant to be so plainly reminded of it in public. What we want is a scientific name, in English, for an English speaking people.

"If it is necessary to have the name of a plant in Greek for the good of science, why is it not just as necessary to have the balance of the book in the same language? Then, if it is worth while to translate any portion of the book into English, why not translate the whole of it, including the names?

"When the Swede, Linnæus, (how about Michaux) named the plant *Chrysobolanus oblongifolius*, why did he not wrestle with his Greek lexicon till he found out what *Chrysobolanus* meant in Swedish, and then delve in his Latin lexicon for the Swedish for *oblongifolius*, and then write the name in the same language as his book, so the Swedes could understand it? Then, when his book was translated in Greek, the Greeks would see their beloved *Chrysobolanus*; and when his book was translated into Latin, the Latins would embrace their familiar *oblongifolius*; and when translated into English we would comprehend the oblong-leaved coco plum and could pronounce it. Why not? You make light of his naming it 'Love in the Everglades,' or 'Wilkinson's Glory.' Well, it is funny. I will even admit it is absurd, yes, ridiculous, in Sweden, where it would certainly be equally, but no more harsh, unpronounceable and pedantic than *Chrysobolanus oblongifolius* in the United States. Finally you say, 'When the English language becomes the universal language of the earth there will be no more difficulty about it.' Thanks! Thanks!!

"Now fix up a botany suitable for the whole world, in the English language, for there are over 100,000,000 people now ready to begin and more coming. 'Now what are you going to do about it?' Are 100,000,000 people worthy of scientific consideration when 'there is no difficulty about it?'"

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RANUNCULUS , Persian, in mixture.....	.80
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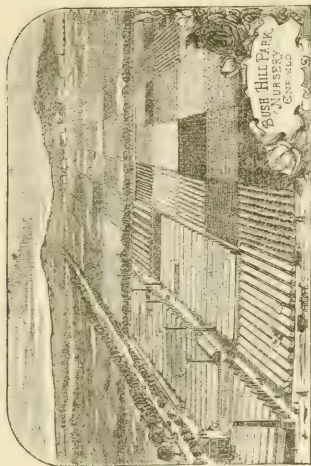
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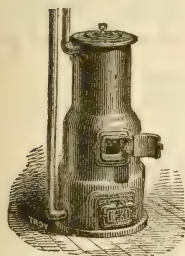
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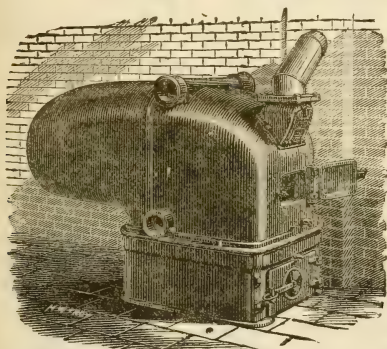


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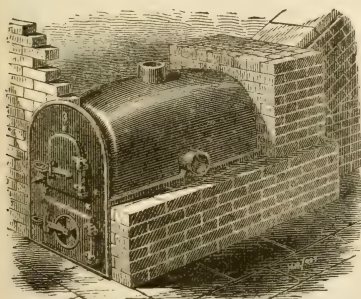
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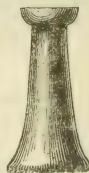


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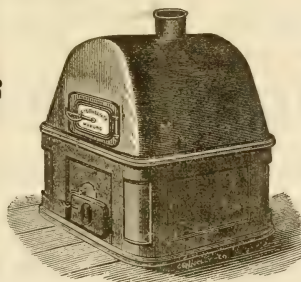
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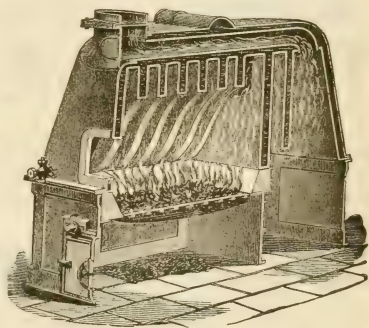
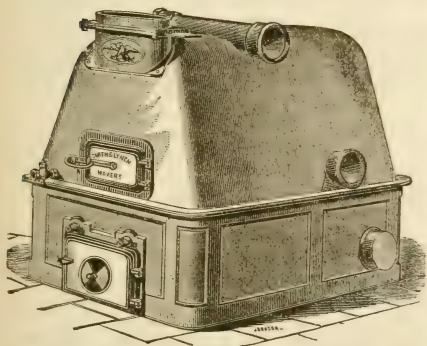
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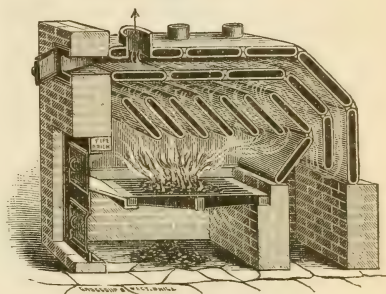
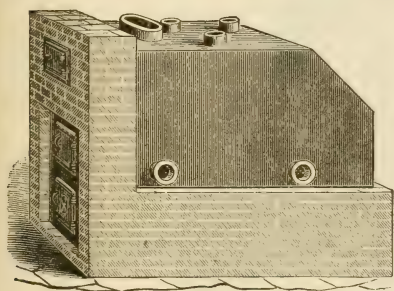
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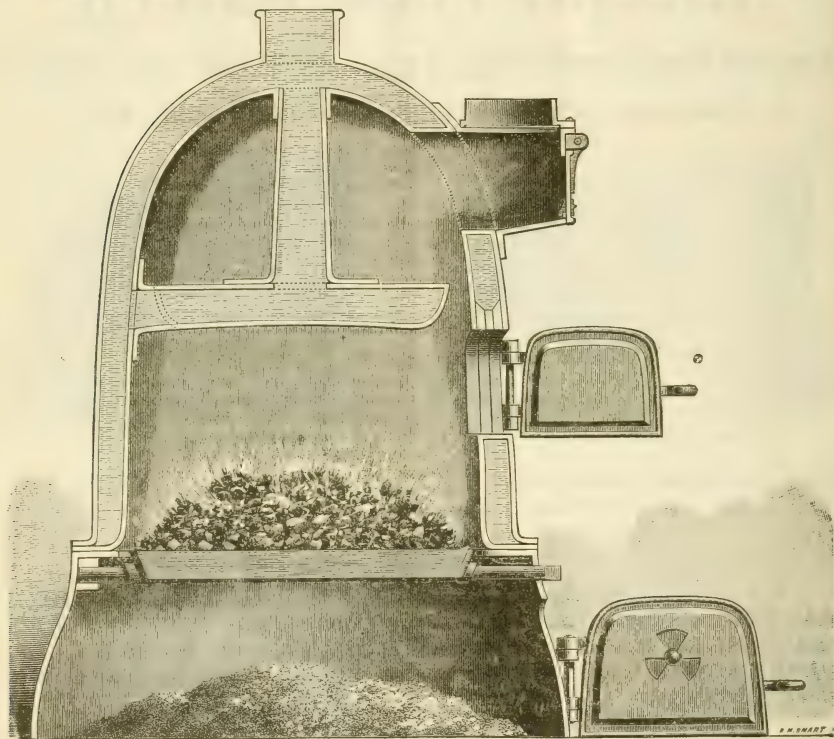
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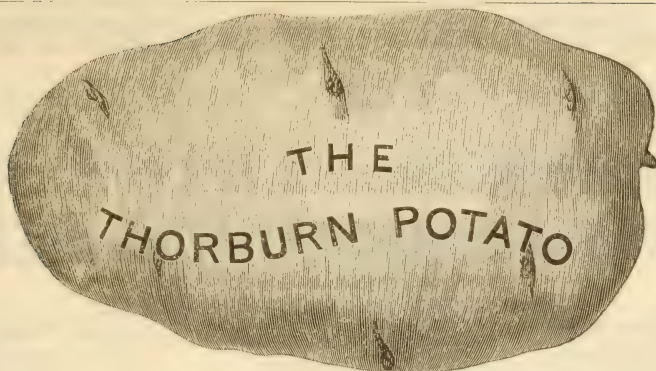
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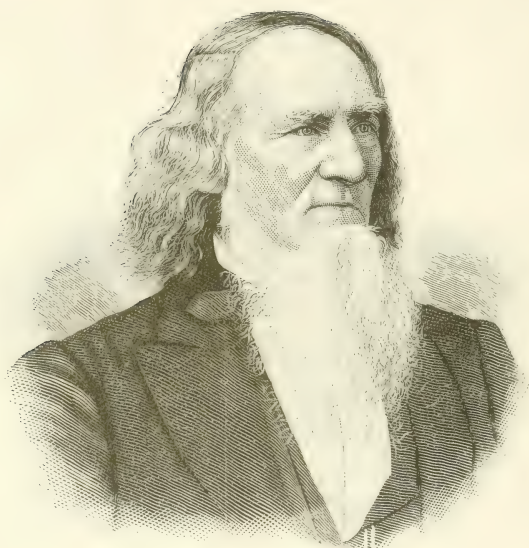
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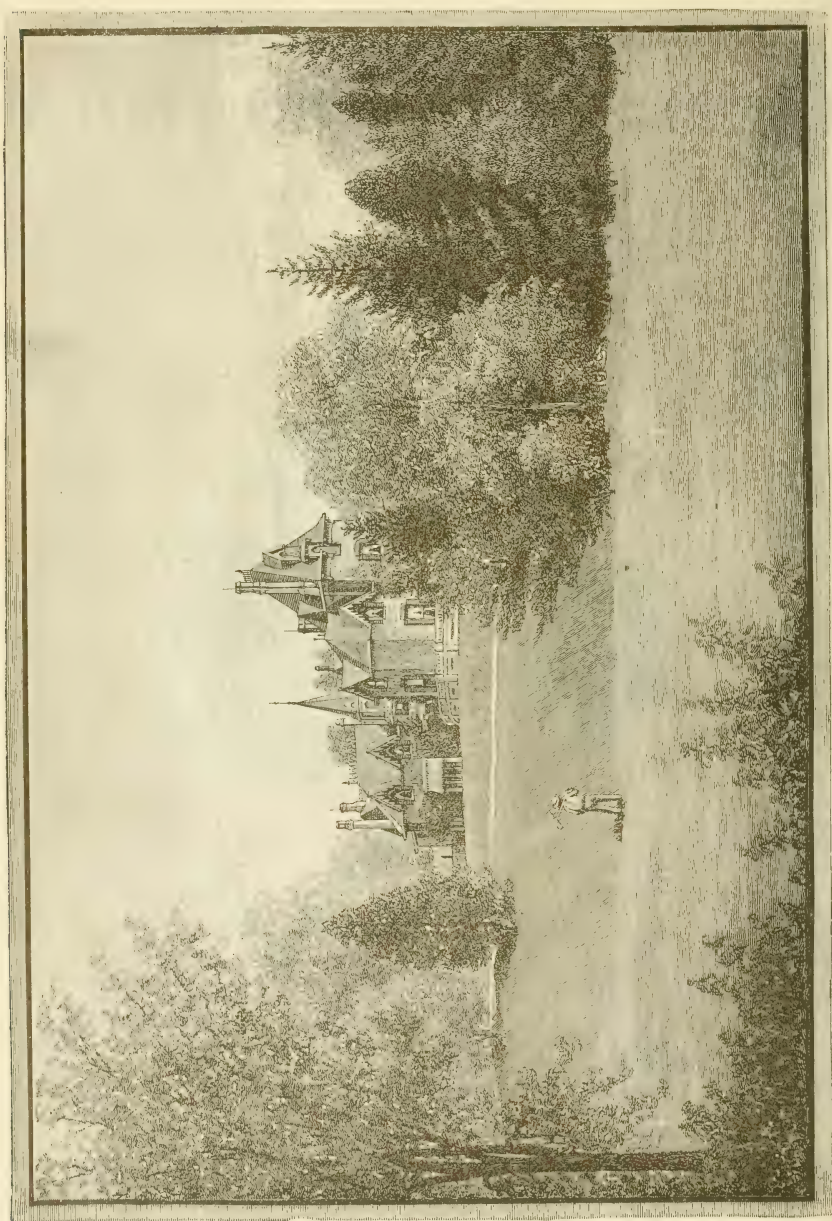
FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

In making lawns it is more and more evident that discrimination should be used as to the kind of grass to be employed. Under the shade of trees, where it is not very shady, but is yet rather dry in summer time, there is nothing better than the sheep fescue grass, *Festuca ovina*. Under the same conditions, but more shady, the flat stemmed Blue grass, *Poa compressa*. In low ground, but not wet, the Bent grasses—species of *Agrostis*—are excellent, as they also are for ground subject to slight salt spray. Where the situation is not too wet and dry in summer or too cold in winter, Perennial Rye grass is very good; and for general purposes, outside of the other special cases, the Kentucky Blue grass, *Poa pratensis*, is best of all. For the long hot summers of the Southern Atlantic States no first-class lawn grass is known; the Bermuda grass we believe is the only one that will at all keep a green smooth face during summer, but this one will not bear close mowing. If any better has been found, it is not yet generally known. In sowing seed in the fall, in the North where young grass plants may be drawn out during a thaw, it is usual to sow wheat or rye with the grass seed. The comparatively heavy leaves fall on the small grass plants and

keep them in the earth. There is no other use for wheat or rye, and it should not therefore be sown on a spring-made lawn. The grass seed should be sown as early in spring as it is practicable to work the ground. Very well rotted manure or some fertilizer is excellent to fasten the setting of the lawn. Clover should never on any account be sown with grass seeds for lawns, nor should any other creeping thing that will dispute with the grass the right to exist. Weeds of any kind that are likely to seed should be drawn out by hand or trowel. Few things pay better than to keep a lawn weeded during the first year of seeding. Towards fall inequalities may be noted over the surface. The lower places may have fine earth spread over, neatly raked, and rolled over when dry. The grass plants will come through the following spring. The result will be a lawn of which one may be proud. Where it is difficult to get grass seed to grow well sodding has to be resorted to. It is not easy to get laborers to do this well, except near large cities where the men have more practice. As a general rule seeding will make a better lawn, if we can afford to wait a year to get it.

In trimming hedges the shears seldom get down to the plane of the year before. For this reason the hedge often becomes in time higher or wider



Residence of William Barton, Irvington-on-Hudson, N. Y.

than is desirable. In deciduous hedges this may be remedied by cutting back to the ground at this season. When spring comes a thick mass of sprouts will push out which can be nipped into shape as the season grows. The hedge, as most people know by this time, should be wider at bottom than at top, so that the leaves may all get as much advantage from light as possible. The more shade at bottom, the sooner the hedge gets thin at the base. The beauty and effectiveness of a hedge is, to be as vigorous at the bottom as at the top. For deciduous hedges there are the English and American Beeches, English and American Hornbeam, *Pyrus Japonica*, Chinese and American Privet, Silver Thorn or *Elæagnus*, Buckthorn, Osage orange, Honey Locust and Berberry. These have been well tried and are in general use. But since the introduction of barbed wire a greater variety of shrubs may be employed for deciduous hedges. Two or three strands of barbed wire may be stretched on temporary stakes over the hedge, and the plants growing through the wire will sustain them when the posts rot away. This in a measure supplies the thorns the shrubs may be deficient in, and makes the protection the plants alone could not give.

In managing hedges do not begin trimming too early. The old fallacy that pruning strengthens plants has been wholly exploded. It weakens plants; is, in fact, a severe blow to their vital power. Strong shoots appear after pruning certainly, because they get food for themselves that was intended for scores of others as well. It is therefore not wise to trim a young hedge at all for several years. Take an Osage or Honey Locust, strong growing plants, for instance; let them grow as they will for two or three seasons, according to the thickness of their stems; when they are, say 2 inches thick, saw them to the ground at this season. Then the numerous strong shoots that will push up the following year will make a complete thick hedge 4 feet high in one season. Where the barbed wire is to be employed as a strengthener to a weak kind of plant it may not be put up till this cutting down of strong plants for the final benefit of the hedge is resorted to.

Evergreen hedges, unfortunately, can not be cut down when they become too large. They will not sprout from the base. The only safeguard against getting too large is to keep them cut rather lower than we should want them ultimately to become, so as to provide for the future accretions. The barbed wire lines for the plants to grow through are very useful in evergreen

hedges. They are seldom used for protective fences because cattle and unruly boys can easily break through. But with the barbed wire we may have protection with their winter beauty.

Chinese and American Arbor Vitæ, Norway Spruce, Hemlock Spruce, Scotch Pine, White Pine, and in some cases Red Cedar, are the usual plants for hedges north of the Potomac; or south, in the elevated regions where the frost is absent or light, the broad leaved evergreens are employed. The Japan Euonymus is one of the best, though *Pittosporum*, *Gardenias*, *Oleanders*, Chinese Tea, and similar plants are often employed very effectively.

In arranging for the beauty of one's garden there is more art in deciding the location for the trees than in anything else. Indeed it is here generally that the most important part of the art of the landscape gardener comes in. In some places the trees are set with almost mathematical precision, each at any rate by itself. There is much in the beauty of single trees, and to lead us to desire that no part of the branches are to be interfered with by those of another; but we cannot do without groups or clumps, where it is a matter of little consequence what becomes of the lower branches in the interior of the mass. Then masses divide views, which is one of the chief efforts of the landscape gardener. If we see the building all at once, it seems the same house no matter how we may wander around it, but when every view of a dwelling is flanked by its own separate set of groups distinct pictures are presented that one may almost believe he has a dozen mansions instead of one.

In illustration of these admirable principles in landscape gardening, we give on opposite page an illustration of the residence and grounds of Wm. Barton, Esq., Irvington-on-the-Hudson, N. Y. We see here the beauty of the single tree, the open lawn with glimpse of the house, the group of trees concealing part of the house, and we can readily comprehend how different the view of that house would be if we were on the other side of the group, as we are when on the main drive.

What is true of the large mansion is true of the humblest residence where there is any room for gardening. We use there small growing plants—shrubs—for groups, instead of trees. The writer has seen grounds of not over a quarter of an acre given an inexpressible beauty few could imagine by a little art in the arrangement of trees and shrubs.

COMMUNICATIONS.

DOUBLE FLOWERS.

BY F. L. BASSETT.

Is a flower any more beautiful for being double? Of course tastes differ, but I think not. True beauty in anything is dependent mainly on form; form being aided often by color. The common Chinese Wistaria with its pendent racemes of papilionaceous flowers, is indeed beautiful, and there is little to choose between the blue and the white. But when it comes to doubling the flowers—whatever it may be as a curiosity—as an object of beauty it is a step in the wrong direction.

The prime object of a flower is reproduction. Nothing is more interesting and beautiful than the various means employed to insure perfect fertilization. The hydrangea with part of the flowers large and showy to attract the insects to the insignificant perfect ones, the orchids with their many ways to lure the insects and prevent self-fertilization, the kalmias with their spring stamens that snap and throw the pollen when the corolla is sufficiently expanded, or oftener when a bee or bug disengages them, while in search of honey or pollen; these are beautiful adaptations of nature that her children may be fruitful.

In double flowers, all these are lost in the blind aim at multiplicity and complexity which are rarely ever beautiful. In the case of bedding plants and flowers intended to be made up, double flowers are sometimes excusable, for in that case the form of a group, as a whole, is the main object, and each flower loses much of its individuality in order to give unity to the group.

Now, dear reader, look at a double petunia, geranium, violet, or any of these monstrosities, and ask yourself if their beauty is enhanced in any way by being double. *Little Silver, N. Y.*

EDITORIAL NOTES.

NEW PARK AT WILMINGTON, DEL.—A commission is now engaged taking the land for this new park. Bonds at $3\frac{1}{2}$ per cent. will raise the money to pay for it. A Board of Commissioners will have charge of the work, in which the zealous promoter of the scheme, Mr. W. M. Canby, will find a place.

BLUE GUM TREE IN FLORIDA.—A correspondent of the *Florida Dispatch* says trees 50 feet high, were killed by last December's freeze, and that it is useless to plant this tree anywhere in Florida.

AN IMAGINATIVE GARDEN.—D'Israeli, in his novel of *Lothair*, thus sketches the garden of Lady Corisande:

"It was formed upon a gentle southern slope, with turfen terraces, walled in on three sides, the fourth consisting of arches of Golden Yew. The Duke had given this garden to Lady Corisande, in order that she might practice her theory that flower gardens should be sweet and luxuriant, and not hard and scentless works of art. Here in the season flourished abundantly all those productions of Nature which are now banished from our once delightful senses; huge bushes of Honeysuckle, and bowers of Sweet Peas, Sweetbriar and Jasmine clustering over the walls, and Gilliflowers scenting with their sweet breath the ancient bricks from which they seemed to spring; there were banks of Violets, which the southern breeze always stirred, and Mignonette filled every vacant nook. As they entered now, it seemed a blaze of Roses and Carnations, though one recognized in a moment the presence of the Lily, the Heliotrope and the Stock; some white peacocks were basking on the southern wall, and one of them, as the visitors entered, moved and displayed his plumage with scornful pride. The bees were busy in the air, but their homes were near, and you might watch them in their glassy hives. 'Now is not Corisande quite right,' said Lord St. Aldergonde, as he presented Madame Phœbus with a garland of Woodbine. All agreed with him, and they sauntered and rambled in the sunny air amid a blaze of butterflies, and the ceaseless hum of bees."

KELREUTERIA PANICULATA.—Old as this tree is in the gardens of New York, Philadelphia and Boston, it seems only yet becoming popular, as its merits make it well deserved to be. Its panicked spikes of yellow blossoms give it a grand appearance in July; while its oriental foliage gives it a charm at all times. In the fall, the rich orange brown of the fading leaves makes one feel that if this is a sample of all other Japan trees, some Asiatic fall scenery may equal that of America. There is a particularly lovely specimen on the grounds of Mr. Caleb Cope, at Chestnut Hill. Mr. Cope believes that the locality has much to do with the superiority of his specimen. It is shaded in the afternoon, getting only the morning sun.

WILD ROSES.—These are growing favorites, not only for the delicate fragrance which most possess, but also because of the great show which the mostly red fruit makes in the autumn. One of the largest in this respect is *Rosa villosa*, a European species. The fruit is as large as a pigeon's egg, and covered with bristly hair.

CALADIUM ESCULENTUM.—With abundance of manure and plenty of water, this makes a magnificent summer ornament in the garden. The *Country Gentleman* notes that on the grounds of D.

M. Dunning, at Auburn, New York, leaves last summer stood 7 to 8 feet high, with blades 4 feet long by 2 feet 10 inches wide. Has anyone been able to excel this?

DEGENERATION THROUGH CULTURE.—It is a well-known fact that grape culture in America got a fearful set back on account of degeneracy produced by long continued soft-wood propagation, and florists are now pursuing the same fatal course with the rose.

In the Old World the Hollyhock was also worked to death. As having a general bearing on this forcing kind of propagation, we reproduce from the *Gardeners' Magazine* what the editor says of the Hollyhock:

"The revival of this noble flower has been more rapid and general than we anticipated when we first directed attention to the facts. All that we have said about the injurious effects of the forcing system of propagation that was formerly adopted, and of the necessity for promoting healthy growth irrespective of all other considerations, whether of "improvement" or of haste in making stock, is justified by what we now see in the many places where the flower has obtained reasonable attention. Half-a-yard of learned nonsense about the anatomy of the fungus that has endeavoured to strangle it is, we think, crushed down to nothing by our advice to lovers of the hollyhock "to make it grow." The advice has been acted on, and the hollyhock has been saved. It was formerly the rule to kill the plant by grafting in a temperature of 80°, and by raising seedlings and striking cuttings in a temperature of 70°. Those practices have been abandoned, and the revival compels us to say, as we have said above of the recovery of the potato, that the disease that assailed it was in the nature of a punishment to man for his unjust treatment of one of Nature's choicest gifts."

TAXUS ADPRESSA.—This often goes under the name of Japan yew in our collections; but a correspondent of the London *Garden* says it was a chance seedling of the common English yew, found in the nursery of Messrs. Dickson of the Chester nurseries. It was named *T. brevifolia* when first sent out by Messrs. Dickson, but Mr. Knight, of the Chelsea nurseries, named it *T. adpressa*. The Oregon yew is *Taxus brevifolia*, so that even as the Latin name of a variety, *adpressa* should be retained for this curious and pretty plant.

WALLFLOWERS.—These are rarely seen now, because they refuse to be hardy. But they are admirable room plants. There is no odor from any flower just like that which these flowers give, and it is universally agreeable. It is the favorite flower of Queen Victoria, and large quantities are

grown in her gardens, for cutting to supply her parlors.

ROSA POLYANTHA.—According to M. Jean Sisley in *Journal des Roses*, this is not the original name. It should be *Rosa multiflora*. *R. polyantha* must be reduced to a synonym.

ROSE, HER MAJESTY.—It is instructive to know that a homely English farmer, Mr. H. Bennett, now retired from the doubtfully profitable occupation of corn growing, should have beaten both home and Continental raisers by producing, not only for the year the finest new rose, but also one which will probably prove the best of a decade of years. We are thankful that Her Majesty does not wear those heavy habiliments of color which have marked so many of our new roses of recent introduction; on the contrary, it is of a lovely soft flesh tint. Just as A. K. Williams has proved to be the richest colored and most beautiful rose of its class so far, so will Her Majesty occupy that distinguished position amongst fair roses—in fact, amongst regal flowers the queen. On stands of many blooms there has been such a ringing the changes upon the Baroness de Rothschild and La France, both very beautiful of their kind, that another new rose belonging to their section is indeed a treasure. Her Majesty, as becomes such a royal flower, is large in size and beautiful in form; and it was noticeable, in spite of the expansion caused by the heat, that she maintained her good looks to the last.—*The Garden*.

LILIES.—Many pleasing associations are connected with the Lily; and it has long since been adopted as an emblem of purity. The Rose has been called the queen of flowers; but the Lily, since the introduction of the splendid Japan varieties and others, may fairly claim to be its rival. The whole tribe of Lilies are beautiful flowers, while many of them are truly magnificent, combining elegance of form, richness and variety of color, and delicious fragrance. They are generally of easy culture, mostly hardy, and flourish well in almost every variety of soil and climate.

Among the many fine species which have been introduced of late years, none has given more general satisfaction than the Japan Lilies—*Lilium lancifolium*. They are perfectly hardy, and succeed well everywhere; strong bulbs bloom in profusion, throwing up their flowering stems to the height of 3 or 4 feet, and producing from six to twenty flowers, according to the size and strength of the bulbs. The flowers internally are covered with a beautiful frost-like surface, standing

out like crystals, and richly marked and tinted with rose and crimson spots; excelling in beauty any description that can be given. In addition to their great beauty, they are exceedingly fragrant. They bloom in August and September; and their hardness, easy culture, and elegance, commend them to all admirers of beautiful flowers.

All the varieties of the Japan Lilies are perfectly adapted to culture in pots. For this purpose, pot them in a mixture of light turfy loam and leaf mould.

The *Lilium auratum*, or Golden-rayed Lily, is also from Japan. This is a most superb Lily, and has been called the King of Lilies. The flowers are very large, 10 or 12 inches in diameter, pure white, studded with crimson spots, with a ray or band of golden yellow running lengthwise through the middle of each petal. It is also very fragrant. Strong, well-established bulbs will produce a dozen or more of these magnificent flowers. It is perfectly hardy in the open ground; and also grows and blooms finely in pots.

Lilium Brownii is a noble, hardy Lily, with very large, trumpet-shaped flowers, pure white inside, with a purple tinge on the outside, and quite fragrant. A splendid Lily; but as yet quite scarce and expensive.

All the varieties of *Lilium fulgens* are very hardy, and of strong, upright growth, blooming in large heads or panicles of flowers, varying in color from bright orange to deep orange-crimson shades, and are remarkably attractive and highly ornamental.

Lilium longiflorum is a most beautiful pure white Lily; also fragrant, and exceedingly fine for planting in masses, growing about 18 inches high; hardy, and bloom freely. They are very cheap in price, and no garden should be without them. They are sure to give satisfaction.

The Old White Lily is a universal favorite, and needs no description.

Plant the bulbs about 5 inches deep. When required to be removed, take them up as soon as the tops fade, and plant again in fresh ground as soon as possible.

A layer of 6 inches of well-rotted cow manure, placed 5 or 6 inches below the bulbs, is the best fertilizer I have tried for lilies.—*C. M. Hovey.*

SAWDUST FOR RHODODENDRONS.—When I was at Mentone, some six weeks since, Dr. Bennet showed me some Rhododendrons, as a curiosity, growing in his garden in the Maritime Alps. He informed me that the peat in which they were

growing had cost him £20 to obtain by rail from—I think he said—Milan. I gave him the description of the Rhododendrons in the garden of the late Mr. Cuthbert Johnson at Croydon, growing entirely in sawdust. It must have been fifteen or sixteen years since I first saw this experiment. The Rhododendrons were then growing luxuriantly in a large bed of pure sawdust. As I was interested in this mode I again called ten years afterwards, and Mr. Johnson again showed me the result. He said, "You see on the right that large bed of Rhododendrons with leaves growing with great vigor, but there is not a single flower; on the left you see the plants covered with flowers, and of a large size. Those on the right are growing in oak sawdust, those on the left in deal sawdust." If I am not right I must be corrected by the editor of this journal, who is well acquainted with these experiments. Turpentine might probably be so prepared as to prove a valuable manure in the formation of the flowers of many plants. Dr. Bennet said he should immediately profit by my information, as there was an abundance of deal sawdust in Mentone.—*Cor. of Journal of Horticulture.*

LAYERING ROSES WITH NOTCHED SHOOTS.—This method of layering has been applied with great success to climbing Roses, whose annual shoots are from 3 ft. to 10 ft. in length. When grown on a commercial scale the parent plants are set in beds at a distance of from 4 ft. to 6 ft. 8 in. from each other, according to the variety. In the spring immediately following the plantation the parent plants are pruned down level with the earth, in order to obtain a supply of healthy shoots which will develop themselves during the summer and autumn. When the cold weather sets in these shoots are covered over with straw to protect them from the frost, not that it will kill them, but it may possibly so alter the condition of the woody fibre as to stop its growth and endanger the success of the layering. In the month of April or May, when the frost is no longer to be feared, and the sap has commenced its upward movement, we proceed as follows: We open round the parent stock a trench about 1 ft. 4 in. wide and 10 in. deep, the depth depending on the quality of the soil. A shoot is then bent down to the bottom of the trench, making it describe a somewhat sharp curve. The shoot must be kept in its proper position by a wooden hooked peg about 8 in. long, and is notched half-way through the wood at the bottom of an eye placed on the under side and on the lowest part of the curve.

The hooked peg is driven into the ground over the middle of the curved shoot, far enough to keep the layer firmly in its place, after which the whole is covered up with mould. This operation is repeated all round the Rose tree, as long, in fact, as there are any shoots to layer. In order to avoid the shoots crossing each other and becoming entangled, the shoot which presents itself most naturally to the operator is the one chosen, and a space of from 2 in. to 3 in. should be left between each of the layers. The layering being finished, the trench is filled up either with the earth of the bed itself, if it be sufficiently light and rich for the purpose, or, what is much better,

a compost made of equal parts of sand and well-rotted leaves, or equal parts of sand and old night soil well deodorized. When the hole has been filled up to the level of the surrounding soil, a little hillock of earth is formed round the layers so as to keep in the water with which they are watered. At the point where the shoot issues from the earth a stick is thrust in vertically, against which the shoot is trained by being tied with bast, rush, or willow. The layers will have become sufficiently rooted by the autumn, if during the summer we give them the attention that all plants require to make them grow luxuriantly.—*J. Lachaume, in Garden.*

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

A lady of the writer's acquaintance, who has fine window flowers, and a nice conservatory or rather greenhouse attached to the dwelling-house, finds no little pleasure in raising seedlings with the view of getting new varieties of flowers. Every one now knows enough of botany to distinguish



Cineraria, Shuttlecock.

the stamens from the pistils of flowers, and that the pistils are the parts of the flowers that finally develop the seed, and they know that the pollen dust which the stamens produce, applied to the

stigma or apex of the pistil, is the life-giving principle without which no seed can follow. To obtain new varieties it is only necessary that the pollen of a distinct variety of one kind should receive the pollen of another, and the seedlings that result usually produce forms different from either parent. In this way this lady raises pansies, petunias, phloxes, geraniums, cinerarias, and many other things, occasionally giving forms even the money-loving florist might envy. Surely this branch of window gardening might have more imitators, and the pleasure which the growing of flowers gives be highly increased. Very often wholly new races are obtained by taking some eccentric sport and raising young from it, for there is generally a strong hereditary character in any form after it has once been brought into existence. Just now the cineraria is blooming, or will be soon, in windows and greenhouses; and to illustrate our meaning we give a sketch from the *Journal of Horticulture* of a new race to be known as the Shuttlecock. The lower portion of the ray corolla has been rolled up into a quill form, as we see in some *Chrysanthemums*, giving them a very novel appearance. Possibly this was started by the grower of some plant of a cineraria noting one corolla with this tendency, or perhaps one whole flower, and saving the seed, thereby fixing the hereditary character, after which it would be easy to produce the race.

It is at this season more than any other that we

get pleasure from pot-plants; and we hope that this seasonable hint may be the means of adding to the pleasure which our readers take in window-plant culture.

COMMUNICATIONS.

TWO HANDSOME BEGONIAS.

BY ANNA GRISCOM.

On visiting the greenhouses of R. J. Halliday, Baltimore, the other day, I found there a very interesting collection of palms, ferns and leaf-plants. Among the latter were two very handsome begonias. One named the Fire King is a leaf-plant, though the flowers are quite pretty being a rose-pink in color. The stems of this plant when young, are of a brilliant fire-red, and covered with a growth of fine hairs which add to the curious effect. Over the young leaves of a pale green brown deepening in the centre to brown, there seems to shimmer a glow resembling flame, while the whole leaf, when just opening, is of striking fire-red. When the plant is new to the beholder, the effect is almost startling. The stems are long in proportion to the leaf and the outlines very graceful.

The second one has large pale green leaves, shaded and tinted with brown, the nerves or veins being of a bright green. A rich velvety sheen covers the leaves, and gives to the plant a distinguished and very elegant appearance. The colors seem to change with the light, as if the leaves were in motion. As the plant can be cultivated to a considerable height, and is covered closely with the leaves, it makes a valuable ornament to the parlor or conservatory. The flowers are of a light pink and grow in pretty clusters over it. The name is *Begonia Sogœnsis*. I saw, also, at this establishment, the *Paulinia thalictrifolia* in bloom. The leaves are divided like the Maiden-hair fern, but are small. The flowers are white, and in shape like a forget-me-not, but much larger, and grow in pretty clusters on rather a short stem. They are fragrant, and when plucked with a leaf or two adhering make a fairy-like bouquet.

During the past summer, while cultivating several varieties of begonias, I found they flowered beautifully on being treated twice a week with a weak solution of liquid manure. The tuberous rooted varieties were loaded with flowers, and when these were sometimes broken off for bouquets, new shoots appeared with marvellous rapidity. The young plants increased speedily in size, and

showed that they were in proper course of cultivation, by their luxuriance in blossom and leaf. They were watered as freely as a Calla lily; often twice a day if the heat was excessive. Partly-spent cow-manure was added to the earth in which they grew.

Baltimore, Md.

ONCIDIUM DIVARICATUM.

BY CHARLES E. FARNELL.

The cushion-lipped *Oncidium*, *Oncidium divaricatum*, is a very pretty small but abundant-flowering species, and when well grown a useful plant. Its leaves are nearly oval shape, and of a yellowish green color. The flower scape which springs from the base of the bulb, grows from 1 to 2 feet in height, and is erect about half-way up, the remainder being drooping, and on this the flowers are produced. The flowers are very beautiful when closely examined, the petals being of a bright yellow color. At the base is a trace of orange red, while the large flat yellow lip is spotted with dark crimson.

Its period of flowering is during the late spring and early summer months, and the flowers will remain a long time in perfection if the plant is placed in a dry cool situation as soon as they are fully expanded, care being taken to moisten the roots occasionally.

This pretty species is a native of Brazil, where it was discovered by A. S. Heatherly, Esq., and it first flowered in the gardens of the London Horticultural Society in May, 1826. It is one of those orchids that can be easily cultivated, and does best grown in a basket filled with fresh sphagnum moss, intermixed with bits of broken charcoal, and suspended in a partially shaded situation. In placing the plants in the baskets, keep them well elevated in the centre, in order to prevent the young shoots from injury from wet and damp. During the plant's season of growth, it should be given a warm moist atmosphere, and an average temperature of 65°, while during its season of rest it should be kept cool and dry; only give enough water to keep their leaves and bulbs plump and firm.

Propagation is effected by a careful division of the plant, and this should be done just before the pseudo bulbs start into growth.

The generic name is derived from "ogkidon," a tubercle, and is given from the peculiar excrescences observable at the base of the lip of all *Oncidiæ*, and the specific from the loose straggling raceme of flowers.

Queens, N. Y.

EDITORIAL NOTES.

ASPARAGUS PLUMOSUS.—A correspondent recently inquired for the best method of cultivating this pretty plant. A contributor to *Gardening World* thus responds:

"This elegant South African evergreen climber may be seen in all its grandeur in the large conservatory at Clifton Hall, Nottingham. Mr. Anderson, the able gardener there, procured the original plant six years ago, and after growing it in a pot for about two years, decided to make up a border for it at the bottom of the back wall of the conservatory. The border is composed principally of lumpy sandy loam, a little peat, leaf soil, and a dash of sand. This exceedingly handsome specimen seems to thoroughly enjoy this compost, as well as the shady position it occupies behind, or partly under, large specimen palms and tree ferns, etc. As a matter of curiosity, I ran the tape round it about one foot from the ground, and found it to measure 6 feet in circumference, and about 30 feet high by 12 feet wide, trained up the back wall to the top of the house, and its pretty feathery growths are not only ornamental to the conservatory, but most useful to cut for table decoration. Mr. Anderson does not go in for handbushes, but generally for a bushel basket full at a time, and, to fully prove its lasting qualities, I enclose a specimen which I have had in a cold room for the last three weeks without water. I have omitted to say there are two of those fine plants in the conservatory, which is a fair-sized house, measuring 127 feet long by about 40 feet wide, and both plants seem to enjoy their positions immensely."

PRESERVING FLOWERS OF CYPRIPEDIUM INSIGNE.—The *American Florist* says of *Cypripedium insigne*: "The cut blooms may be kept in water from four to six weeks in a cool room in good condition."

COSMOS BI-FINNATA.—This pretty plant, closely allied to the single dahlia, has been induced to break into a variety of colors. An enterprising Philadelphia firm of florists, Lonsdale & Burton, made a good speculation by introducing them the past autumn.

MANURE FOR CHRYSANTHEMUMS.—European growers find guano one of the best fertilizers in producing show chrysanthemums.

JAPANESE CHRYSANTHEMUMS.—Some years ago, Mr. Fortune sent home from Japan some examples of an altogether new race of Chrysanthemums, which were exhibited by the late Mr. John Standish when in bloom, and they created much interest, and were undoubted floral sensations. They are so distinct in character, as to be almost altogether without the artificial barriers of "prop-

erties set up by the strict florist, such as form and substance, smoothness and color, and other conditions implied in his general principle of quality; in fact, they are quite without the pale of these regulations, and, indeed, their value to a considerable extent lies in the fact that they are without the range of the florist's laws, and the varieties that may be said to mostly set these laws at defiance are actually some of the most striking and attractive of the new Japanese kinds, of great value for conservatory decoration in late autumn. They are both early and late in blooming, some coming into flower early in October, others not till the beginning of January, and thus an unusual succession of one particular type of flower is secured. They are quite as hardy as the ordinary Chrysanthemum, but of much taller growth, and because of their lateness in blooming should be grown under glass to do them full justice, and have their flowers large and finely developed.

They are certainly very novel in appearance, and are quite distinct from the ordinary kinds of Chrysanthemums. They must not be trusted to, for the purpose of leaving small specimen plants—anyone requiring those must look to the Pompon varieties—for the tall growth of the varieties of the Japanese section is an effectual barrier to their use as small specimens. The habit of growth is decidedly tall, and the best way to get good flowers is to let the plants grow upright. They require good cultivation when grown in pots, and should be treated to manure water twice a week. As soon as the flower buds appear, they must be reduced to one on each shoot, and be grown very strong, to get the flowers massive and full. If the flowers be kept as dry as possible—that is, protected from the effect of damp—they will remain in bloom for a long time. Those of our readers imperfectly acquainted with this race of Chrysanthemums, would do well to obtain a few for greenhouse and conservatory decoration, for they will excite the curiosity and admiration of everyone, their colors being very striking, somewhat resembling the plumage of tropical birds, and others have the appearance of tassels made up of various kinds of beautifully-colored silk, and others of narrow strips of colored paper.

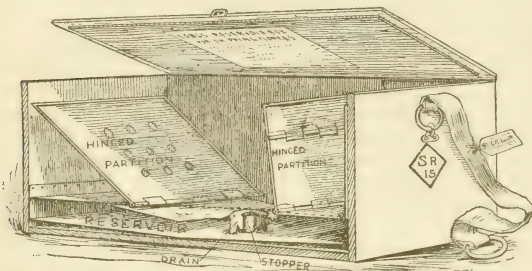
The propagation of the Japanese Chrysanthemums is managed just in the same way as in the case of the ordinary Chrysanthemums. Autumn-struck cuttings make excellent plants, as they get into growth early in spring, and lay the foundation of good strong plants during the summer.

—*Gardeners' Record*.

A SHIPPING BOX FOR CUT FLOWERS.—Mr. Long, of Buffalo, has applied for a patent for a new style of box for shipping cut flowers, of which we give herewith an illustration.

It will be seen that the arrangements are made for receiving and confining the water from the

name, and the fact that he admits it was "nameless," does not warrant the giving it a name. When it comes on trial among American florists, we fancy it is the new-fangled name in classic Dutch that will be nameless, and the "Nameless Beauty" will prevail.



Reservoir Shipping Box showing one side removed and zinc bottom partly broken to show interior arrangement.

melting ice, and provision is made for ventilation. The hinged partition provides the needed slant for oblique packing; the space beneath making a separate apartment for small flowers. It provides for either wet or dry packing; and Carnations which need dry packing, can be sent as safely in one of them as other flowers. Mr. Long says: Altogether the adaptability of this box is most striking, and especially in the respect that the most fragile and valuable flowers like Roses, Valley Lily, Tulips, Hyacinths and Narcissus carry perfectly without heating or decaying—such common faults in warm weather.

DAPHNE INDICA.—This old-fashioned, sweet-scented pot evergreen, is still everywhere popular. It is kept too warm as a general thing. A temperature of from 45° to 55° is enough for it. It is an admirable room-plant, or for cool conservatories. They are natives of China, and require about the same temperature as a camellia.

ROSE, NAMENLOSE SCHONE.—This grand rose for the florists, recently figured in our columns, has been sold by M. Deegen, the introducer, for 1,000 marks, or about \$400—a large figure in Europe. With the purchase, however, its new owner has thought proper to give it a new name—Furstine Leontine Furstenberg. As Mr. Deegen frankly stated that it was not a new rose with him, but one that had probably been named though now unknown, his idea of calling it "Nameless Beauty" (Namenlose Schone), was a happy conceit. It is just as good a name as if it had a

neat stake, the side shoots regularly stopped and trained, and the flowers pinched off as they appear, till the plant has attained its desired height and size. Others choose to have five or six plants in a 32 or 24-sized pot, and when these are neatly trained they are very useful, and never fail to be admired in the winter season and onwards for several months.

I have grown a few very pretty standard Mignonette plants, and as they are generally much admired, I will briefly detail their cultivation.

About the end of March, seed was sown in several small 48-sized pots, placing three or four seeds in each. The compost used chiefly consisted of decayed turf pulled to pieces with the hand, but not riddled, intermixed with horse droppings passed through a fine sieve; sand being added to keep the compost open. In a mixture of this description, Mignonette seems to thrive well and bloom freely. When the seeds were sown the pots were placed in a cold pit, and as soon as the seedlings were large enough to distinguish which were the largest and strongest plants, the best were selected to remain, and the others thinned out, and thrown away. As soon as the pots were filled with roots, but before the plants became pot-bound, these were moved into 6 inch pots, and in this size single plants will form good heads of bloom, if occasionally assisted with weak manure waterings.

Some prefer larger-sized pots in order to grow extra strong plants, but I rather like 6-inch pots,

for they can then be placed in a small vase, and used occasionally for dinner-table decoration.

When the plants were several inches high, a neat stake was placed to each to keep them erect. The side shoots as they appeared, were carefully pinched off near to the main stem, carefully leaving one or two leaves at the base of each successive shoot to strengthen the plant and keep the roots active. This I consider rather important, as, if the plant were denuded of all its leaves as the stem progressed, its health would become impaired, and premature decay would set in. Much the same course was pursued until the plants had attained the desired height.

As the plants became established, they were removed from the cold pit, and placed on a bed of coal ashes out of doors. They were stopped at heights varying from 16 inches to 2 feet, and as the flower buds appeared these were regularly pinched out, to force the plants to form a neat bushy head, until about the end of September, when each was furnished with a profusion of shoots, which were allowed to expand their bloom. By pinching-off the decayed blooms, the plants will continue to flower throughout the winter months; but, to secure the perfection of fragrance, they require both sun and air, and, consequently, when convenient, should be placed in proximity to the openings by which the air is admitted into the houses.—C. R., in *Gardeners' Record*.

NEW OR RARE PLANTS.

DESIRABLE IMPROVEMENT IN CARNATIONS.—When the Carnation was known as a florist's flower especially grown for summer blooming, it was cut up into numerous classes, such as Picotee, Bizarres, Flakes, and so on. The fringed-edged class, which has given us our winter-flowering kinds, were known as Picotees. The regular old-fashioned clove-scented carnation, with its broad and entire-edged petals, and often with broad flakes of bright color going through each, has nearly disappeared, through being but a summer bloomer. Yet for a while it showed a tendency in the perpetual direction, and we had, with some popularity, tree carnations. If only some one would take hold of them, and give us a race of good free-blooming winter bloomers of this class, some one's fortune would be made.

PERPETUAL DOUBLE WHITE STOCK, PRINCESS ALICE.—In American cut-flower work, the White Stock holds a place little inferior to the Carnation,

and a good everblooming kind would be nearly as valuable. In some respects it would be more valuable, as its tendency to flower at a season when Carnations are scarce, is a strong point in its favor.

Mr. Chas. Lorenz, of Erfurt, has succeeded in producing a perpetual flowering one, which, as the



White Perpetual Flowering Stock, Princess Alice.

illustration shows, continues to produce flowers in succession from the top downwards, as long as the plant lasts. In this case, the blooming season continues open several months. We regard it as one of the best boons to florists that has appeared

for some time. In fact, it marks much the same era in floriculture that inaugurated the winter-blooming Carnation. If sown early, it will produce flowers in the open air from May till November or December.

IMPROVEMENT IN THE CHRYSANTHEMUM.—The first attempt at the improvement of the Chrysanthemum was made in 1836, in Jersey, one

of the islands in the English Channel. This improver was a baker by trade, but had a passionate fondness for the flower. The Editor of this magazine well remembers his first great improvement. It was called Webber's Queen, but whether that was the name of the baker or not, the writer cannot say. It was quite as good as kinds now popular.

FRUIT AND VEGETABLE GARDENING.

EDITORIAL NOTES.

PROPRIETARY INTEREST IN NEW FRUITS.—This matter still continues to be a subject of discussion in the magazines. Why cannot the inventor of a new fruit get the same protection from law as the inventor of any other novelty? The only answer we could ever hear was that the inventor of a new fruit cannot present to the patent office in language and by drawings the precise points on which he claims novelty, as inventors in other claims can.

Now there seems no way but for the grower to raise the fruits himself, and put it in the market, or to dispose of it to some one who will. But this course does not amount to much, for it is the public verdict that gives value to a new fruit. The raiser's own estimate only goes for so much in the whole opinion. Unfortunately after the public has the plant to decide on, it is too late to be of any service to the raiser, and it is chiefly here that the trouble comes in. If the raisers of the Concord grape and the Downing strawberry had not distributed their plants their names would not be blessed by the thousands who are grateful to-day.

If any one can see any plan by which the raiser of a new fruit would get a fair recompense for his good work, it would be a welcome suggestion. Nothing practical has been suggested, though the question has been for years before the public.

PRESERVING FRUITS.—Col. Wilder gave recently an address before the Massachusetts Horticultural Society, and concludes that the conditions of success may be briefly stated as follows: The perfect control of temperature, light and moisture. All experience shows that these conditions must be complied with or success cannot be

attained; hence these apartments must be cool, and constructed so as to exclude at pleasure the external atmosphere, which starts fermentation. After many years of experience, both with and without ice, I have adopted a house built in a cool, shady aspect, with the door on the north, and with a thoroughly drained and cemented cellar, with small, double windows, which may be opened or closed at pleasure. In this way I am enabled to keep my late fall and winter pears until February or March in good condition. Apples may be kept at a lower temperature than pears—say 34° to 40°.

TRADE VIEWS.—A correspondent of the *Michigan Horticulturist* says that:

"Pomological Societies are largely made up of nurserymen, who may or may not have some pet scheme, in which they are pecuniarily interested. This may or may not influence their nerves enough to sway their opinions."

So far as we have seen, the great body of nurserymen are remarkably free from bias in their discussions at these conventions. We have known men in the trade say nothing when they have been unwittingly caught with a large stock of a poor thing. But we never knew any one praise what he knew to be unworthy, and we have even known cases where men with large stocks of an article condemn it, when forced by circumstances to take part in debate.

THE PEACH TREE BORER IN THE CHERRY.—Our attention was called to a young five-year-old cherry that had been nearly bored to death near the ground. Not knowing what particular borer attacked the cherry, specimens were sent to Prof. C. V. Riley, at Washington, whose representative, Mr. Howard, pronounces them *Ægeria exitiosa*, the peach tree borer.

EARLY PEACHES.—The American early peaches, Amsden, Downing, Red May, and others of that class, are objectionable from having adherent stones. The *Bulletino della R. Società Toscana di Orticultura* says that Dr. Hogg and Precoce argentée, two that compare well with these in earliness, are pure free-stones.

APPLE, DICKINSON.—The original tree was planted by Mrs. Sarah Dickinson in West Chester, Pa., some twenty years ago. It bears regularly, is very productive, keeps long, is large, beautiful, and of good quality. As figured in the *Horticultural Art Journal*, it is 4 inches long, and about as wide towards the base, becoming conical towards the apex. It is yellowish, though almost wholly covered with scarlet crimson flakes.

BLACKBERRIES AND APPLES IN TARTS.—A correspondent of the *Journal of Horticulture* says: "Blackberries and apples are excellent for mixing in tarts. The blackberries impart a sweetness or relish similar to that of a handful of raspberries to a quart of red currants. We consider either or both good, separately or together, and everyone can have them, as they will grow anywhere and might supplant the Nettles and rubbish only too common about homesteads."

PEAR, LUCY DUKE.—In an essay read before a Western Pomological Society complaint was made that Eastern horticultural papers gave so little encouragement to the introducers of new fruits to write up their novelties, that new magazines were necessary to open up a new field for them. So far as the *GARDENERS' MONTHLY* is concerned this remark has some show of truth, for we are continually under the unpleasant duty of declining cuts and descriptions of new fruits, not because we do not regard them good, but because we think that many branches of pomology have so advanced that mere goodness is no great commendation. We want to be sure that a

novelty is better in some one point at least, or for some special purpose, than others existing, before we think it worth an extended notice in our columns. Hence such things as apples, pears, peaches, strawberries and raspberries, where the varieties are very numerous, or new ones easily raised, it is not easy to produce a variety that will seem to us worthy of much space in the *GARDENERS' MONTHLY*.

We illustrate
lieve to be
the notice

to-day a pear we believe worthy of the space occupies—the Lucy Duke, raised by Mrs. Lucy Duke, of Beaufort, North Carolina, from seed of a California pear. It is a large brown pear, and reminds us very much of those excellent varieties raised by the late Bernard Fox, of San Jose, and which were figured by us at the time, one of which, the Barry, is working its way to high favor. The quality of this is fully equal to those excellent varieties. The fruit from which our drawing is made reached us in the middle of October. We would hardly like to say that the flavor is equal to a first-class Seckel, but one may safely aver that it is very little behind it. It has the same rich aroma that is so pleasing to all lovers of fine pears. The specimens came from Mr. J. Van Lindley, of Pomona, North Carolina.

Lucy Duke Pear

WEIGHTS OF SOME WELL-KNOWN PEARS.—At the Chiswick Pear Congress of last autumn, Mr. Le Cornu, of Jersey, exhibited samples of Uvedales St. Germain at 1 lb. 10 oz., and of Catillac, the same. Other good weights were—a Belle Angevine, 2 lb. 3 oz.; General Todleben, 1 lb. 11 oz.; 8 Louise Bonne of Jersey, 4½ lbs.; 6 Pitmaston Duchess, 7 lb.; and Beurré Clairgeau, 4¾ lbs.

HYBRID SAND PEARS.—The *Horticultural Art Journal* says that Conklin's Hybrid was obtained from seed of the Sand pear in 1856. It is of the

same general appearance as the Kieffer. "Passably good, we think, better than Kieffer."

ALEXANDER LUCAS PEAR.—Large pears are not always good pears, but they are prized when the two qualities go together. This new pear is often 6 inches long and 1½ inches round, and has a high character in Belgium.

THE LARGEST PEARS IN THE WORLD.—Speaking of the small islands in the English Channel, between France and England, the *Gardeners' Magazine* says:

"Of the two islands Jersey certainly bears off the palm for a superior growth of pears, the fruit being both larger and finer flavored. Forty-five years ago, when Guernsey was exporting annually some ten thousand bushels of pears, Jersey was sending away no less than 2,000 bushels in the same period; but now Jersey takes the lead both in the matter of quantity and quality. The warmer, dryer climate of this island is more favorable to the culture of this fruit. The Chaumontel is, indeed, brought to such perfection in no other part of the world. The same pear in France is not to be mentioned on the same day, and the grafts introduced into England from time to time do not retain the superiority for which the Jersey produce is so famed.

"With respect to the extraordinary size sometimes attained by this pear, Guernsey stands higher than Jersey, for a fruit grown at Laporte in that island, in 1849, measured 6½ in. in length, 14½ in. in girth, and weighed no less than 38 ounces. Jersey does not appear to have produced any pear weighing more than 30 ounces. Professor Ansted tells of a group of pears from a single tree of which, he says, 'there is, perhaps, no more remarkable instance recorded.' It occurred in the season of 1861, when of five fruits obtained from one tree in the gardens of Mr. Marquand, of Bailiff's Cross, Guernsey, four of them weighed together seven and a-half pounds. It is worthy of remark that in this case the tree, though usually prolific, bore only these five fruits. The pears in question weighed respectively 32½, 33, 31½ and 21 ounces."

CUMBERLAND TRIUMPH STRAWBERRY.—This variety is getting to be an old kind now, but Mr. Albaugh says it is by far the best variety to grow in the South.

STRAWBERRY ITASCA.—This has been placed before the public by Mr. J. W. Haynes, of Delphi, Indiana, who claims that it is larger than Wilson, Crescent or Captain Jack, and equally productive; 225 berries have been gathered from a year-old plant.

LISTS OF STRAWBERRIES.—Complaint is sometimes made of the interminable lists of fruit in modern catalogues. But our fathers were as bad.

In the catalogue of W. R. Prince & Co., issued in 1855, there are ninety-nine varieties offered.

THE LARGE MONTMORENCY CHERRY. By a colored plate in the *Canadian Horticulturist* this cherry seems a particularly showy kind, and the scarlet crimson color is very pleasing. It appears to belong to the same class of which the Early Richmond is the type.

CHERRY, SAUNDERS' EVERBEARING.—A market grower wants a fruit that will bear all at once, so that without making "two bites at a cherry" he may get the whole into his baskets at one or two pickings. But the most useful amateur fruit is the one that will bear in succession and not all at once. This variety matures continuously from the 10th of July to the last of September, though the flowering, like the ordinary cherries, open all at one time. It is from a year-old seedling imported from France by Mr. F. B. Wallis, and introduced by Mr. C. O. Saunders, of Everett, Mass. A beautiful colored plate appears in the *Horticultural Art Journal* for October.

THE CURRANT.—Most persons know that the currant of the grocer, is a grape that produces no seeds; and, because it produces no seeds, the berries are only half the size of an ordinary grape. It is supposed that these facts arise from imperfect fertilization. A correspondent inquires why the grape is produced at all, if the fertilization is defective. In short, he wants to know the exact meaning of imperfect fertilization. The honest answer to this is, that we do not know. Though the currant has been known so long, we are not aware of any scientific treatise on the method of its fertilization—for we take it for granted there must be some pollen influence in order to have a fruit set at all, though it may not become of full size or perfect its seeds.

GRAPES TO THE ACRE.—Three tons is about the heaviest acreage reported from California. The vines were three years planted.

WORDEN GRAPE.—At the recent meeting of the American Horticultural Society, the Worden, Mr. Hubbard said, was a larger, handsomer, and more attractive berry than the Concord, and ripened from a week to ten days earlier. Purchasers tasting it, would call it a first-class Concord. And Mr. Geo. W. Campbell said: "I was one of the first in Ohio to raise the Worden Grape. It is larger than the Concord, jucier, and ripens earlier than the Concord, but it has all the faults

of that popular grape, the skin being tender, thus making it a poor shipping grape."

MUSCAT OF ALEXANDRIA GRAPE.—Hot-house grapes are getting to be quite a luxury in America; as the ease with which California fills the market with open-air fruits gives people little desire to raise them artificially. Still, out-door culture has never given us fruit of as good quality, or as early as good hot-house culture can produce them; and there are still a few amateurs who would not be without a grape-house on any consideration. The following hint from the *Journal of Horticulture*, regarding the proper treatment of Muscats, will have some interest:

"Shallow well-drained borders, where abundant water could be given—where, indeed, the surplus from each watering could at once be seen running out of the borders, they being quite above the level of the surrounding ground—seem to suit the Muscat exactly, provided always abundance of water be given when that is required, whether from the borders being inside, or in dry weather if outside.

"Nothing is more calculated to prove disastrous to the welfare of Muscats, than too deep and ill-drained borders. Much time, labor and expense have been laid out on vine borders sometimes, which is very ill-requited, in regard to Muscats at least, for the simple reasons that the borders are made without enough drainage, and also too deep. Give me a shallow border above the level of the ground, an abundant supply of water, plenty of good soil and manures to top dress with every spring, and, other things being favorable, Muscats will thrive and fruit as freely as can be desired."

REMARKABLE WATERMELONS.—Messrs. J. M. Thorburn & Co. say that the (Emler's Triumph Watermelon has seeds so small that fifty-five will go into a number 6 thimble; and that the Volga Watermelon, while hard and solid, has scarcely any rind. They are introductions from the Caspian country on the lower Volga River.

OLD ORANGE TREES.—According to a writer in *El Diario de la Marina*, there is still flourishing in the porch of the Convent of Santa Sabina, in Rome, an orange tree that is said to have been planted in A. D. 1200. Another, in the Monastery of Tondi, is supposed to have been planted by Sir Thomas Aquinas in 1278. In the Moorish Alcazar, at Seville, Spain, exists one that was planted during the reign of Pedro I, between 1350 and 1366. Others there are known to be three hundred and forty years old.

THE USES OF ORANGES.—Owing to some untoward circumstances in the European orange gardens, there is occasionally a glut of fruit in the

English markets, and then the fruit will not keep well. The glut will soon be past, and oranges become dear. It happens that at the present time, owing to the failure of certain kinds of home-grown fruit in the past summer, many English families have but small fruit stores, and therefore it may be seasonable to suggest that cheap oranges may be turned to some account to help out until rhubarb and green gooseberries are plentiful once more.

Orange Compote is one of the most elegant and acceptable delicacies of its class. Take a sufficient number of oranges, and to every six allow one pint of syrup, made as I have before directed for compotes. Peel the oranges and put aside half the peel, which must be freed as much as possible of the woolly undercrust or pith, and the peeled oranges must also be stripped of this pith, which is easily accomplished if they are ripe and sound. Divide the oranges into their natural divisions without cutting or breaking the skin, and when the syrup is thick and boiling, put them in, and let them simmer for five minutes, when they must be taken out and set aside. Cut up into narrow strips the peel that has been stripped of its pith and put into the syrup, and boil it fast until it is quite thick, and then pour over the oranges, and when cold they are ready to serve. If oranges are prepared in this way as a gift to a sick friend, or to store as a preserve, proceed in precisely the same manner, but when the divisions are taken out of the syrup, put them into jars and when the syrup is again boiled up and thickened, pour enough over to cover them, and tie them down while hot. Oranges preserved in this way will keep good for any reasonable length of time.

Orange Salad may be served with the dessert, and should not be prepared until wanted. It should be made of the finest St. Michael's oranges and the deep red Maltese oranges in equal proportions. They must not be peeled, but cut into four, and then sliced and piled edgewise on the dish, to form a pyramid, the rinds all outwards, and the colors well mixed. Sift over them a thick coat of fine white sugar, and then carefully pour over a little strong brandy or liqueur, maraschino being perhaps the best.

Orange Jelly.—Having many times eaten this delicious jelly, I was curious about the exact mode of preparing it, but could neither obtain by honestly asking for it the information I desired, nor discover by my own experiments how to succeed to my complete satisfaction. Any fruit jelly may be made by stewing the fruit in its own juice with

sugar, and after straining and reducing adding isinglass and cochineal; but in the case of orange jelly, M. Soyer's method is undoubtedly the best, and he describes it as follows: Procure five oranges and one lemon, take the rind off two of the oranges, and half of the lemon, and remove the pith, put them into a basin, and squeeze the juice of the fruit into it; then put a quarter of a pound of sugar into a stewpan, with half a pint of water, and set it to boil until it becomes a thick syrup, then take it off, and add the juice and rind of the fruits, cover the stewpan, and place it again on the fire; as soon as boiling commences skim well, and add one glass of water by degrees, which will assist its clarification. Let it boil another minute, then add half an ounce of good isinglass, dissolved in half a pint of water and run through a bag; pass the whole through a jelly-bag, add a few drops of prepared cochineal to give an orange tint, and then fill a mould and place it on ice; turn out as before.

Orange Sauce.—It is a great pity that the English do not, as a rule, permit sweets to accompany meats, for when the combination is judiciously managed, the result is delightful, and adds not only to the variety, but to the elegance of a dinner. Amongst the many uses of oranges in cookery, there is none more important than to accompany any kind of roasted wild fowl, ducklings, and even a pheasant or guinea fowl. With any of these orange sauce is as appropriate as currant jelly is with a haunch of venison, or with a saddle of mutton that has been hung until it was not safe to let it hang any longer, lest something worse should happen. To make a nice orange sauce, cut up one orange, peel and all, into thin slices. Put the whole with the juice that has run from it, and the juice pressed out of another orange into a stewpan, with a good lump of sugar as large as a walnut, and let it simmer for five minutes. Then strain off the clear syrup, and throw away the rest. Add to it half a pint of strong white broth, made from veal or chicken. The trimmings of roasted poultry or game will make a capital stock for this purpose; but in any case it must be good, entirely free from fat, and quite clear and strong, without color or flavoring. Simmer the mixture for a few minutes, skim with care, and add the juice of an orange freshly pressed when it is served.—*Gardeners' Magazine.*

JAPAN VEGETABLES.—A remarkably interesting paper was read by Mr. Kizo Tamari, Japan Commissioner, before the American Horticultural So-

ciety. He said that burdock roots were highly esteemed as a vegetable in Japan, as were all kinds of radishes. Turnips, and our "Tan-yan" are also esteemed. Over seven millions of bushels are annually grown. Sweet Potatoes, Chinese Yam, Tiger Lilies, and Leeks are much used. The Saga hispida, or Ivy Bean, is extensively grown; over eleven million bushels being the product. Egg-plants, cucumbers, gourds and squashes are also used. The cabbage as we have it, is unknown. A kind of chrysanthemum is used as we use spinach. The yellow flowers of the common chrysanthemum are also used. Shoots of Aralia cordata and bamboos are used as asparagus, and a species of *Cryptotænia* is used as celery. The shoots of the brake and Royal fern are also used. The roots of the *Nelumbium sagittaria*, and a tuberous *Scirpus* are also generally in use. Some sea-weeds, notably *Porphyra vulgaris*, are highly esteemed. "*Entrenia Wasabi*" takes the place of our horse-radish.

WITLOOF.—A few years ago, Messrs. Vilmorin introduced a new vegetable to be used as a salad—an improvement of the common chicory—under the name of Witloof. It seems to be growing in favor in the old world. Have any of our American readers had experience with it?

THE BEAUTY OF HEBRON POTATO.—This American variety has become one of the leading kinds for general culture in Great Britain.

LETTUCE, BUTTERHEAD.—This is a new variety introduced by Neidhardt, of Erfurt. It is claimed for it, that it is remarkably hard, matures early, and with good manure has given hard solid, cabbage-like heads, weighing one pound. The outer leaves are light green, and the inner ones golden yellow.

SCRAPS AND QUERIES.

HORTICULTURAL INFORMATION.—"L. A. B.," Wisconsin, writes: "I subscribe for a number of papers, and have not found the right one yet. I want to get hold of a paper devoting space to vegetable gardening. Send me the GARDENERS' MONTHLY one year. I have just finished a very good greenhouse, and am going to grow vegetables exclusively. My house is 100x20 feet, heated by 850 feet 4-inch soil pipe, and one of Weathered's No. 6 Heaters. I have used 12x16 'A' double glass, and have spared no means to make the house first class."

[We are always happy to answer any inquiry that may be made on vegetable growing, or any

other branch of gardening. There are now so many excellent practical books on gardening, that it seems a needless waste of space to repeat in a magazine what these cheap treatises contain. The province of a magazine is to keep ahead; to

report all the new advances that books in general do not contain. A magazine has to have for its motto the advice of some stores, "If you do not see what you want, please ask for it." The Editor will always cheerfully respond.—Ed. G. M.]

FORESTRY.

EDITORIAL NOTES.

A REMARKABLE LINDEN TREE.—This is to be seen in the grounds of the New Bath Hotel at Matlock Bath; and it is reported to be at least 300 years old, and the local records say, probably with much truth, that it is one of the largest in the kingdom. When, and under what circumstances it was originally planted is not known. The tree measures 300 feet in circumference; the branches sweep down to the ground, and are propped up by strong supports in all directions, and the points of the branches resting on the ground impart to it a very unique appearance. Mr. Thomas Tyack, the proprietor of the New Bath Hotel, is very proud of this arboreal wonder; and he informed us that he has frequently dined between 200 and 300 persons under its branches. Visitors to Matlock Bath should not fail to inspect this really wonderful tree, which is carefully preserved by Mr. Tyack, and shares with the petrifying wells, the grand scenery of the Derwent Valley, the veteran carp in the town pond, the trout fishing in the Derwent, the warm springs, etc., the honor of being one of the sights of this charming Derbyshire place.—*R. D., in Gardeners' Chronicle.*

SCRAPS AND QUERIES.

OREGON FORESTS AND RAINFALL.—Mrs. Fanny E. Briggs, La Centre, Washington Territory, writes: "This region is covered with a heavy growth of timber, mostly giant firs, with a dense undergrowth, save here and there a small natural opening, and the clearings of settlers. Up and down the Columbia it is the same; the 'continuous woods' still skirt the 'Oregon,' as in the days when it heard 'no sound save its own dashings.'"

"Of the eight summers we have passed here,

four have been very dry, three or four months without rain, or at most, only slight showers, and vegetation suffers from drouth more or less every summer.

"Now, if the presence or absence of forests is the chief factor in determining the rainfall of any given section, how are these facts to be explained or reconciled?"

THE RUSSIAN MULBERRY.—An Illinois correspondent writes: "In the Kansas Forestry Report, page 32, 1885, I. Horner, Emporia, Kansas, says:

"The hardy Mulberry, commonly styled Russian Mulberry, is a cross of several varieties of Mulberry, the chief of which are the *Morus alba*, *Morus Tartarica*, and *Morus nigra*. It was introduced into South Russia, by the Russian Czar about a century ago, and was imposed upon the tree planters by the Russian Government, as the tree to be most important on the list of trees planted."

"He goes on with a great deal more of its history. Please give your views whether a mixture from different varieties can be grown from seeds, so as to preserve the best qualities of the different kinds."

[Varieties produced, whether by crossing between two or more varieties, or by the natural laws of variation common to all species, have hereditary characters; and, if the Mulberries were produced as stated, there is no reason why they might not reproduce their special characters from seed.

But the statement that this variety was obtained by the method referred to is evidently a reckless one, manufactured by the writer of the paragraph quoted, or by some one equally reckless. No elaborate attempts at crossing to get new varieties were made a century ago; and besides, the *Morus tatarica*, which is the Russian form of the 'White Mulberry,' has been known as such long before the time of a "Russian Czar about a century ago."

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

NATIVE LILIES OF OREGON.

BY MRS. FANNY E. BRIGGS.

How many White Lilies are native of the Pacific Coast? Some four years since, I received some bulbs from the Sierras described as "white, very fragrant;" also one dug in the woods near Oregon City, description same. I supposed them to be identical, but there were differences in appearance and growth from the first, and this year has still greater difference in flower.

The Oregon has flowers in general shape like *Candidum*, of good size and firm texture, very glossy, white, specked with chocolate dots. Those from California are similar in shape, but the divisions are much narrower, especially at base, where they are quite claw-like. They are unspotted, but have a conspicuous green line extending from the base of each petal half-way to the tip.

The Oregon is altogether the finer Lily, and stronger in growth, being still green and vigorous, while the California by its side, died to the ground more than a month ago. Both bloom in June, the California first.

FLOWERING OF THE SWEET POTATO.

BY ISAAC BURK.

The inquiry of your correspondent of the South, about the flowering of the sweet potato, reminds me of a field I saw in full bloom in the summer of 1884, on the farm of Job Haines in Gloucester County, New Jersey. It was particularly interesting to me, for I had been watching for nearly fifty years, whenever I had the opportunity, without ever seeing one before or since. The seed was purchased from a farmer in the same county, but I was unable to learn where he procured the tubers. Others in the neighborhood had them to flower profusely, but Mr. Haines unfortunately ran out of the plants; and as none of the flowers produced seeds, I presume they have, like former introductions, lost the habit of flowering.

Your remarks about bud variations were well illustrated by a tuber of the red variety, which I

received from a neighbor this fall. This tuber was red like the rest of the crop for about one-third of its circumference for its full length, while the other two-thirds was a light clear yellow. This variation could not have been produced by pollen, as even in the rare cases where the plant flowers, I believe it never produces seed. *Philadelphia.*

THE MISTLETOE PARASITE.

BY JOHN W. DUNLOP.

In your GARDENERS' MONTHLY for October, Mr. Eisele speaks of "the miserable parasite, the mistletoe." It deserves no such appellation, for it is a very pretty plant and quite interesting. The true mistletoe of England, *Viscum albas*, grows sparingly anywhere. I have seen it on the apple tree, but it is mostly found on the White English Oak, and sometimes on other trees. So interesting was it considered in London, in 1839 to 1841, when I left there, that they were cultivating it as a weeping plant, and it could be found on sale at every good nursery.

Our American mistletoe is the *Phoradendron flavesens*; looks very like its relative. It grows plentifully along the western foot-hills of the Sierra Nevada on the Evergreen Oak. Within six miles of Sacramento, at Oak Grove Tavern, you will see acres of Evergreen Oak, that are heavily loaded with it; and I can assure you, I would give much to have one of them growing in my garden.

I used to wonder what attraction these parasites had for the yellow-billed Magpie, *Pica Nuttallii*.

They are always found in abundance where the mistletoe grows. It may be that they are after the large acorns of the oak. *Milwaukee, Wis.*

BLOOMING OF THE SWEET POTATO.

F. J. VOGEL.

In another article, I see the question asked, Did you ever see the Sweet Potato bloom? Here you can see them to perfection in bloom, as many as ten or more on the ends of the vines, and they mature their seed, which, when planted, will readily sprout and produce invariable new varieties. Will send you some of the seed when ripe.

The Sugar Cane here tassels, which is quite a novelty, as it makes a fine plume, soft and silky to the touch. Farther south it produces seed, so it is said.

We have also a novelty in the Citrus family—a variegated Orange and Lemon. The leaves and young wood are beautifully marked white and creamy yellow. This makes quite a contrast with green of the other portions of the leaves. The young shoots of the Lemon are of a purplish red. The fruits are marked the same as the leaves. The Orange belongs to bitter sweet class, and is only for ornament. The Lemon is intensely sour, and is only for ornament.

There are a great many flowers here, but none of them gorgeous. The prevailing colors are yellow, rose white, purple, blue; very few mottled in color. If acceptable, will give an outline of the flora in this part of the State, South Florida.

Lake Maitland, Florida.

ACCLIMATING TREES AND FRUITS.

BY T. O'N.

You may recollect, Mr. Editor, a severe winter some years ago that destroyed many evergreens in this neighborhood that were supposed to be perfectly hardy, whilst more tender varieties were unharmed.

It was the practice many years ago to sow clover and Timothy seed together in the fall. Of late years it is only safe to sow clover in the spring, and then not too early. Gardeners and farmers all over the country will tell you that many of their modes of culture have to be changed from time to time, and that many strange things happen that the most experienced and intelligent are unable to give a reason for. The variations in the atmosphere, the absence or excess of some constituent, though the temperature may be the same, and the consequent variation in the condition of the soil, or the sap that feeds the plant, may have something to do with these sports in nature.

[This very suggestive note leads us again to observe that we must agree on what we mean by acclimating. As we have generally understood the word it means so changing a plant's character that it may learn to love conditions it would now despise. But the note of our correspondent would seem to indicate that by acclimating may be meant the changing of the conditions to suit the unchanging nature of the plant.

After all, there may be grounds for belief in

both views. We noted, recently, that we regarded the production of a potato that would be frost-proof a feat beyond the art of acclimation; and yet, if the belief of gentlemen who have recently written in science publications in England be correct, that the modern potato is descended from *Solanum Jamesi*, Fendleri, Maglia, or other tuberous South American forms, mature has already performed that wonder, for the form known as Fendleri is quite hardy in Germantown; and again, there can be no doubt whatever that the Douglas Fir, of Colorado, is the very same thing with that of California, yet the one from Colorado is as hardy as "a rock" in Germantown, while no one has ever been able to get a plant from the Pacific coast through even a mild winter in that place. Starting, as these must have done, from exactly the same parentage, and yet diverging into two races, the one hardy and the other tender, is all the evidence the most positive might desire that plants can change their nature sometimes, and be in this way acclimated, as well as be acclimated by the conditions changing to suit their constitutions.—Ed. G. M.]

PRETTY KANSAS WILD FLOWERS.

BY THOMAS BASSLER.

To-day I add the names of a few more plants, worthy of cultivation, to my list of pretty Kansas wild flowers—to wit: *Dicentra cucullaria*, well-known to most botanists and not needing description. *Schrankia uncinata* (Sensitive Rose), with its little tuft of pink blossoms and sensitive leaves. *Ruellia ciliosa*, in two colors, white and light purple. *Argemone grandiflora*, a noble plant, sometimes four feet high, with light-colored foliage and large white flowers; they look very pretty when many are together. *Salvia azurea grandiflora*, sometimes stands three feet high, with large blue flowers in thick terminal racemes or spikes. *Coreopsis tinctoria*, with yellow rays and brown centres, reminding me, when I first saw them, of my grand-mother's garden in Pennsylvania. *Liatris pycnostachya*, and *scariosa*,—both of which are pinkish purple, in long spikes,—the heads of the first being very close together, and when dried make it look like a plume; hence its name—Kansas Gay Feather. The latter has heads somewhat larger; if dried in a certain way, both make splendid winter flowers. Some of the asters are very beautiful. There are many more that I've seen but have not gathered or identified. "Gray's Botany" will not do for this part of the coun-

try. I have seen several discussions about glazing without putty, but none have spoken of my plan—letting the edges touch instead of overlapping. I have found that the house is kept warm as easily, and leakage from rain no more than from overlapping. Have others tried this plan?

Geuda Springs, Kansas, Oct. 11th, 1886.

NORTHERN LADY-BIRD—*EPILACHNA BOREALIS*.

BY PROF. S. S. RATHVON.

This is the largest species of the true Lady-birds (*Coccinellidæ*) that occurs in Pennsylvania, and it seems to have elicited very little attention as a destructive insect, for the reason, perhaps, that the *Coccinellans* have been generally represented as essentially aphidiphagous in their gastronomical habits; that is, they are said to feed almost exclusively on plant-lice. (*Aphids*.) They are a very common beetle; perhaps, on account of their size, better known than any other species of their family. They are nearly or quite the size of the "Colorado potato beetle," but more hemispherical in form; lemon yellow in color, and the thorax and elytra well covered with large round black spots. When taken in the hand they exude a clear yellow liquid of an unpleasant odor, which appears to come from between the abdominal segments; and the larva has the same habit. A few of them are found every season, and they are widely diffused; and, although they seem scarcely to have provoked a complaint, yet from what I shall have to say about them in this contribution, it will be evident that they possess the possibilities of destructiveness in no ordinary degree; at least to the great cucubitatious family of plants. Both the larva and the imago feed on these plants, and those, as well as the ova and pupa, may be found there at the same time.

In the summer of 1842, I noticed this insect in immense numbers on a wild and worthless cucurbitaceous vine (*Sicyos angulatus*) in Donegal township, Lancaster county, and the whole plant, although a vigorous one, seemed to be blighted; the leaves crisp, or wilted as if scalded; and almost every leaf thus wilted, had on the under side, from two to half a dozen of these lady-birds feeding upon them. I did not notice either eggs, larva or pupa, although they must have been there at the same time. I would not have noticed them in my recent observations, had I not lifted up the leaves and looked beneath them. At the above period this insect was catalogued as *Cocci-*

nella borealis, and generally supposed to possess the carnivorous characteristics of the other species of the genus; being then a mere novice in Entomology, I thought I might have been mistaken in the species, and hence I did not feel like pitting my single observation against existing records. Subsequently, however, on various occasions, I found these insects in limited numbers on pumpkin and squash vines, and at least once on the cucumber; I also obtained specimens of the larva from which I bred the beetle.

About twenty years ago I captured between four and five hundred of these beetles, in the month of March, under the bark of an old tree that stood in a field where corn and pumpkins had been cropped the preceding year; and they were then in their winter hibernation. Perhaps fifty of them had crawled out and were basking in the sun, and the remainder occupied a deep cavity under the bark. This established the fact that this insect passes the winter under some convenient cover near the place where it had bred during the previous summer, and would suggest the idea of seeking for them and destroying them in early spring.

The present season I have had this insect under continuous observation, in all its various stages of development, from the first of July until the first of October, and I am satisfied it possesses the possibility of being as fatal to the *Cucurbitacæ* as the Colorado potato beetle, is to the *Solanacæ*; and that when we form an estimate of the good qualities of "Lady-birds," we must base it upon intelligent discrimination.

We have on our limited premises, and for some years permitted to grow, a few vines of the "Wild Balsam Apple," (*Echinocystis lobatus*) one of the most vigorous runners on friendly soil, belonging to its order. About the first of July I noticed a single specimen of *Epilachna borealis* on this vine, and a day or two afterwards I noticed several groups of yellowish eggs—from 20 to 25 in each—from one cluster of which the young larva were in the act of exclusion—small, feeble, hairy dots, or bunches of dark, diverging bristles. I concluded I would let them pursue their course unmolested, just to notice their transformations, and test their possibilities.

I had some difficulty in determining the actual number of broods this insect was capable of producing in one season; but, from the fact the individuals of a single group, which I had under special observation, passed through all their transformations from ova to imago within the

space of one month, I concluded there were not less than three, although there appeared to be a dozen. The female *Epilachna*, like the female *Doryphora*, does not deposit her eggs all at one time, in one place, nor on one day; therefore, the eggs, the larva in its various stages of growth, the pupa, and the adult insect, may all be present on the vines they infest at the same time, and the second and last named, both voraciously occupied in feeding upon the leaves. Each individual of these three broods, if a female, is capable of producing about one hundred beetles, and for the time being the adult consumes as much as the young. The larva moults five times (perhaps oftener), and after each moult it becomes less greenish and more yellowish in color, and after the last moult it is lemon yellow, bristled all over with yellow spines with blackish ends. It is then nearly as large as the beetle itself; the eyes black, and a sluggish and greedy feeder, without apparent regard to approaching danger. But it is always found on the under side of the leaf, which, being wounded by its presence, wilts and curls around it, affording it protection against any thing that might be hurled upon it from above.

The pupal period is from two to five days, according to temperature, and it is about the same with the incubation of the egg. The pupal transformation is very simple—merely a fastening of the caudal end of the abdomen to the leaf, a dorsal splitting of the skin and pushing it down to the lower end, where it remains a bristling bunch until the evolution of the beetle takes place; after which the transparent integument and spines still remain. The pupa might easily be mistaken for a contracted last stage of the larva; but on closer observation the rudimental elytra and feet become apparent, also the eyes, antennæ, and a number of dark dashes and dots, apparently corresponding with the spots on the mature beetle. The larvæ are able to walk up a very smooth surface; some that I had confined in a glass jar walked up not only the sides of the jar, but also across the under side of the glass lid, and pupated there. There is quite a distinction in the manner of feeding between the larva and the imago. The former eats off only the lower integument and the parenchyma, leaving the upper integument and nervures intact; whilst the latter eats the whole leaf, or as much of it as it can before it becomes too crisp. Wherever you see a wilting leaf with a hole or two cut through it, by lifting up the edges of said leaf you may find from one to a

half dozen great Lady-birds feasting on it; and thus they rapidly pass from one leaf to another, ever seeming to be in pursuit of fresh provender.

Now, in regard to the injury they are capable of inflicting on the vegetation they infest, it, of course, don't amount to much so long as they confine themselves to the vines I have named; but may they not, under favorable circumstances, also attack those plants most nearly allied?—the cucumber, the muskmelon and the canteloupe for instance—especially since they were accompanied on the *Echinocystis* by *Diabrotica vittata* and *r2-punctata*, the former of which is the notorious "striped cucumber beetle." This companionship may indicate a similarity of taste among them. As before stated, they have long been known to infest the pumpkin and squash families, but as these latter are so rough and robust they do not seem to have injured them much; but that is merely a question of numbers.

As to their possibilities, under my observations, I can give you the sum and substance in a few words. After this vine gets a good start we can almost see it grow, and it continues to grow until arrested by the first heavy frost in the fall. This season the Lady-birds followed it up from the base, defoliating or skeletonizing it as they ascended, and prematurely arrested its growth. This plant will grow as long as the main vine is intact and is connected with the ground, but these beetles headed it off, and caused its premature decay. Only a small portion of its worthless fruit matured, and the pods were only half the size of former years. This Lady-bird needs watching.

Lancaster, Pa.

THE MISTLETOE IN FLORIDA.

BY F. J. VOGEL.

Have noticed several articles in the MONTHLY, as to the habits of mistletoe, and upon what trees this parasite delights to grow in different sections of the country. My observations so far have only found it to grow upon the Hickory, Hackberry, Post Oak, Willow-leaved Oak and Water Oak; but most luxuriantly upon the Hickory; makes a bush 4 to 5 feet high, 1½ to 2 inches in diameter. The trees here present a unique appearance, as it grows usually at the tops of the trees—never on the Magnolia or Live Oak in this part of South Florida.

Lake Maitland, Florida, October 25th.

[This is a very interesting note, as showing that while it grows in other sections freely on the Live Oak and Magnolia, it does not seem to be favored by the same trees here.

The fact favors the suggestion made originally by the GARDENERS' MONTHLY, that the failure of the mistletoe to take hold of some trees, is not from any special antipathy; but from local conditions that favor the germination of the seed; and that a change in these conditions might make the Oak in England the favorite of the mistletoe

EDITORIAL NOTES.

ZINNIAS.—Gottingen, in Hanover, seems to have seen the first cultivated Zinnia over one hundred years ago. The seeds came from Peru. The Professor of Botany in the newly-established University (John Godfrey Zinn) figured it. He did not



Zinnia elegans robusta grandiflora plenissima.

in the time of the Druids, and unfavorable to it now.

The matter is one of considerable interest; we shall be glad to have further notes of the host trees of the parasite from other localities. Has anyone seen it on a Pine, Spruce, Juniper, or other coniferous trees?]

think it was a new genus, but, in those days when they had but one name and a host of adjectives, described it as "*Rudbeckia folius oppositis*." Linnaeus saw the distinction between the two, and gave the name to its first describer. Thus we have *Zinnia*. That species is now *Zinnia pauciflora*, and grows wild over the whole of South America from Peru,

extending north to Arizona. Other botanists had considered it a *Bidens*—a common plant in our northern swamps. These references show its relationship. A strong point of difference is the permanence of the ray-florets. In other allied plants they wither and fall away—as in the sun-flower or aster, for instance,—here they remain, though losing the lustre of the earlier stage. From this fact they have obtained the common name of “youth and old age”—young flowers and faded flowers remaining together to the end. The common name, however, has not become common, probably because the botanical name is so easy—*Zinnia* is more commonly its name than its expressive common one. The gay kinds of our gardens come from *Zinnia elegans*, a Mexican species, introduced to England in 1796, but its great improvement by florists has only been of recent date. The first step was to produce them of a variety of colors—that is to say, variety in the strap-shaped ray petals, for the tubular petals of the cone-like disk, with the anthers, were always retained of a bright yellow. These tubular flowers were perfect—that is to say, they had stamens and pistils, and each little floret produced one seed. The ray florets had pistils only, but with pollen, brought by the wind or insects, these florets were generally fertile also.

Of late years florists have produced double zinnias; but the doubling is not as in the rose or carnation, by the change of stamens to petals, but by the little yellow florets of the disk splitting their tubes on one side, opening them, and becoming flat like the ray florets. The most remarkable fact to the close observer is, that, while changing their tubular character to the flat condition, they change both sex and color. They have no longer stamens, but are purely pistillate, as in the ray florets, and are of the same tint. There are, however, usually

a few disk florets retaining the tubular and pollen-bearing character, or if the flower is wholly pistillate, pollen is received from other single or semi-double heads—for these almost wholly pistillate heads are usually productive of a full supply of seeds, and the florists who have undertaken to improve them find little difficulty in getting the characters they desire sufficiently hereditary for commercial purposes.

Among those who have undertaken to lead in the improvement of the *Zinnia*, the firm of Lorenz, of Erfurt—who gave us *Gaillardia Lorenziana*—stands prominent. They have now a strain which has flowers of an enormous size, and wholly double, which we give an illustration. They have carried us back to ante Linnæan time, when the plant had but one name and a string of adjectives. They call it “*Zinnia elegans robusta grandiflora plenissima*,” but we suspect our busy gardeners will shorten its cognomen to “Lorenz’ Zinnias,” or Lorenz’ strain.

AMERICAN MIST TREE AND JUGLANS RUPESTRIS. —In our last, at page 326, there should have been two references to the *Country Gentleman*—one in relation to the American mist tree, the other to the California walnut, *Juglans rupestris*. Unfortunately, the last heading was omitted, and the whole paragraph given to the mist tree. The context will show that the whole extract relates to the walnut, and has no relation to the mist tree.

THE GROUNDSEL TREE.—A correspondent writes that this should have been *Baccharis*, and not *Bacharis*, as given at page 330. We are glad to find this spirit of accuracy pervading our readers. The plant was so named from some association of the plant with *Bacchus*, the god of wine: so that we see how important it is to those who wish to follow the history of plants, that the orthography should be correctly rendered.

LITERATURE, TRAVELS AND PERSONAL NOTES.

EDITORIAL NOTES.

CHARLES M. HOVEY (see Frontispiece).—In our annual presentations of a portrait of some eminent living author in American Horticulture as a frontispiece to our annual volume, few will be more welcome to the readers of the *GARDENERS' MONTHLY* than the veteran Editor, Charles M.

Hovey, of Boston. Horticulture on this continent is probably more indebted to him than to any living man. In the earlier part of the century, J. C. Loudon was editing his *Gardeners' Magazine* in London, a task which did wonders toward raising up an intelligent class of gardeners in the Old World, such as never before had honored the profession. Mr. Hovey determined to do as much

for America, and in 1835, the *American Gardeners' Magazine* made its appearance under his management, the style as well as the name being an exact counterpart of Mr. Loudon's venture. He was fortunate in drawing around him an admirable line of correspondents, who went into the support of the magazine with zeal and intelligence remarkable for the time. In the list are the names of John Lowell, Ives, John Lewis Russell, Wm. Kenrick, A. J. Downing, Robert Manning, S. Downer, B. V. French, Hon. H. A. Dearborn, S. Walker, Michael Floy, Rufus Kittredge, Chas. Downing, J. E. Teschemacher, M. P. Wilder, J. F. Allen, H. W. Beecher, Peter Mackenzie, D. Haggerton, and other names famous in horticultural history—names such as would make at once the fortune of any horticultural publication that could go on with them to-day. With the third volume came a change in its title, chiefly because other short-lived publications were being issued under similar names. It then became, in 1837, *Hovey's Magazine of Horticulture*, maintained its influential existence for thirty-four years, when it was bought by a Boston literary publication, "*Old and New*," which, however, died a few years after. One of the greatest misfortunes to the history of our gentle art is, that no indices to some of these volumes were ever published. In each volume there is simply a table of contents, not in alphabetical order, but following the notation of the pages. An index would at this time give the work an immense value to the history of American Horticulture. The Massachusetts Horticultural Society, which is rich and energetic, could render no better tribute to their excellent comrade's usefulness than by preparing an index of this series of volumes. He is one of the oldest living members of this society. When he commenced this work in 1835, we find the society had 500 members—only five are left now to bear him company. Long before this he was a devoted flower-lover, having at one time as many as sixty varieties of Chrysanthemums, among other collections of plants. The culture of fruits in pots was a great source of garden pleasure in the last generation. In this he led off, having in 1833, exhibited grapes eighteen months old from the cutting, with eighteen bunches on the cane. We find him with a list of thirty strawberries as early as 1830, and it is only necessary to refer to the old favorite, Hovey's Seedling, to show how ardently he went into the improvement of this berry. Few, if any variety, held the crown so long. For thirty consecutive years the records of the Massachusetts Horticultural Society show that it gained the first

premium against the efforts of many other kinds to take this high honor from it. As an author we find him, in 1830, a contributor to the *New England Farmer*. In 1848 he commenced his magnificent work, the *Fruits of America*. In these two volumes one hundred and eight of our best varieties were superbly painted. Since the discontinuance of his magazine his pen has been still active in the cause, and contributions from him are frequent, both in English and American magazines. His grounds were only an acre till 1840, when he secured his present large area. In five years after, he had collected 1,000 varieties of pears, 400 of apple, 50 of plum, besides numbers of others, many of which we find illustrated in his magazine. As early as 1854, we find him exhibiting 365 varieties of pears, which was thought wonderful at that time. In order to test all as they came out, they would be grafted on established trees, so that in many cases several kinds are from one tree.

Much of Mr. Hovey's success as an Editor was, no doubt, due to the love of labor that he united with his intelligence. His first greenhouse was wholly the work of his own hands.

Numbers of the best new plants and fruits were first introduced to the public from his nurseries and seed house in Boston; and many new seedlings of great merit, especially among lilies and camellias, originated with him, and to this day are articles of export to the old world. He had at one time 200 varieties of camellias. Some of his seedlings have had valuable premiums, and one of the writer's pleasures was a glance at the household of treasures in the shape of medals and premium memorials, with which horticultural societies had rewarded his useful works. A large number of beautiful varieties of trees and shrubs owe their origin to him, one of which, *Thuja Hoveyi*, is well known to all planters of choice evergreens. The famous Massachusetts Horticultural Society has honored him with the Presidency; and it is no small tribute to his energy and popularity in the city of Boston, that during his term of office, the membership grew from 500 to 1,000, and \$30,000 were received in donations. The published history of the Society states, that to Mr. Hovey's perseverance and determination chiefly, the beautiful horticultural hall became an established fact.

Not only by his writings and by his example, has Mr. Hovey been a benefactor to American horticulture; but he has ever been a welcome member of conventions and public bodies where information had to be distributed, and where his

earnest manner and fluent utterances always obtained for him marked attention.

During the past six or eight years, he has suffered by the loss of wife, three daughters, daughter-in-law and four grandchildren; but the love of fruit and flower culture still affords him consolation; that he may have health and strength to enjoy them for some years longer with us, is the fervent wish of every lover of American gardening. Mr. Hovey was born in the old town of Cambridge, October 26th, 1810.

THE GARDENERS' MONTHLY FROM AN ENGLISH POINT OF VIEW.—The many friends of the magazine will, we are sure, be pleased to know how their favorite is viewed in the old world. The following from the *Gardeners' Magazine*, of London, will, we are sure, interest them.

While appreciating the compliments paid to him personally, the Editor feels that he owes much of the success of the magazine to the generous support the publisher has received by friends inducing neighbors to subscribe to it, and by the unpaid contributions of so many friends from all parts of the world, who have continually kept the Editor posted on everything new that has arisen.

"The GARDENERS' MONTHLY, edited by Thomas Meehan, is published by Chas. H. Marot, 814 Chestnut Street, Philadelphia. It is a good paper of what may be called the old-fashioned type, of which the *Florist* and *Floral World* are examples, both superseded by weekly papers in this country. To praise it would be a mild imitation of "gilding refined gold," and we forbear, for it is enough to say that it caters for many tastes, takes large views of things, and brings to all questions sound knowledge and good judgment, for the editor is a master of the business who has seen much of the world."

SHORTIA GALACIFOLIA.—The finding of *Shortia galacifolia*, the galax-leaved *Shortia*, on the southern slopes of the Blue Ridge near the head waters of the Keowee river, by Prof. Sargent in September last, was an event of the highest interest to botanists. Since Michaux in 1788 carried a dried specimen to Paris from somewhere in the same locality, the plant, except for that specimen, has remained unknown until a few years ago when it was found growing in limited quantity near Morganton, N. C. Botanists have generally believed that it would be found nearer the scene of Michaux's labors, and Prof. Sargent was fortunate enough to prove their belief well founded. In the first week in November, Mr. F. Boynton of Highlands, who was with Prof. Sargent when he found the plant, met with it again growing in great abundance in another cove on the same

slope. This cove is called Bear Camp, and is reached by exceedingly rough and steep trails, and inhabited by a most primitive people. The fact that this rare plant may be seen growing in profusion will be very welcome news to botanists.

CYCLAMEN.—This name is derived from the Greek *cyclaminos*, meaning roundish, and was suggested to Lobel from the form of its tuberous root. There are six European species—*C. Europæum*, native of Austria, Northern Italy and contiguous countries; *C. repandum*, much the same line, but more Southern; *C. latifolium*, Greece and Palestine; *C. Neapolitanum*, Switzerland, Central Italy to Greece; *C. Græcum*, which is wholly Grecian; *Cyclamen Persicum* is not very different from *C. latifolium*, and the few other species are not much better. The whole genus is very much like each other.

DESICCATING GARBAGE.—"A company in New York City is endeavoring to perfect a process for the desiccation of garbage, says a writer in *Science*, with a view to utilizing the vast quantity of city refuse now dumped into the sea from garbage scows. The matter to be treated is run through a shoot into one end of a revolving cylindrical oven about sixty feet long by 10 or 12 feet in diameter. The oven, which is strongly constructed of boiler iron, is enclosed in a brick furnace, one end being higher than the other. A fire in the furnace keeps an equable heat in the oven, and the latter is slowly revolved by a steam engine. The garbage or refuse enters at the elevated end, is thoroughly stirred and dried as it slowly travels from one end to the other of the revolving oven, and emerges from its lower end desiccated and inoffensive."

We have here the germ of great usefulness to agriculture and horticulture. In Philadelphia the garbage problem has puzzled the authorities. Until recently the material was contracted for by owners of hogs, but the hoggeries have been suppressed by the Board of Health, and, as the city comprises the whole county, the authorities have to pay enormous advances on old contracting rates to get the garbage removed. When it can be cheaply dried, like fruit or vegetables, it can be hauled without offence to the country, and either fed there to hogs or used directly as manure for the land.

THE BOUVARDIA.—Botany loves to honor other branches of science as well as its own. Bouvard, after whom, Salisbury, in 1806, made *Bouvardia*, was an astronomer. It belongs to the Cinchonaceous division of Rubiaceæ. They are Mexican plants. *B. flava* was introduced in 1845; *B. leiantha*, *B. longiflora*, and *B. Humboldtii*, are types of the

different sections. In 1857, Parsons, of Brighton in England, crossed longiflora and leiantha, and gave us "Laura," Hogarth, and others. In 1867, Lemoine, of Nancy, in France, made a long march on these. New York came with its white ones, Davisonii and Vreelandii, in 1852, but it seems to have taken some time to get them known in England. The Kentucky work of Nanz & Neuner, however, has made the greatest mark on the development of the Bouvardia. They and Lemoine still keep at the head of the work in improving this almost indispensable florists' flower. The latter firm sent out a number of varieties in 1884.

IMPROVED PANSIES.—The pansy became a florists' flower little more than 50 years ago. The varieties then had names like roses and carnations. Lord Gambier was the name of the first pansy so distinguished. George IV. was about the second named kind. During the last ten or fifteen years it has been found so easy to raise good pansies from seed that they do not now receive distinctive names.

THE ULSTER GRAPE.—Some specimens of this were sent to the Editor by Mr. Caywood, but, being addressed to the publication office, did not come to the Editor's hand till spoiled.

We have a standing notice in our columns when space allows that matter for the Editor must be addressed to him at Germantown, and not to the office of publication in Philadelphia.

HISTORY OF TOBACCO.—Sir Wm. Robinson, Governor of Trinidad, has written a treatise on the culture of tobacco in the West Indies, from which the following is an extract:

"The history of tobacco in England is both interesting and somewhat amusing. As every one knows, or ought to know, we are indebted to Sir Walter Raleigh for this popular product. In 1585 he introduced it into England, and having an eye to business he persuaded 'Good Queen Bess' to give him a patent for the possession of Virginia, from which excellent supplies have been, and are still procured. The first tobacco plant grown in Great Britain was imported from Virginia. Raleigh, not satisfied with his property in America, obtained from the Virgin Queen, in addition thereto, 12,000 acres of forfeited land in Cork and Waterford, on a portion of which the tobacco plant was afterwards regularly cultivated.

"Raleigh was a courtier—a gentleman of position and great influence—and it is not surprising that the habit of smoking which he adopted became very fashionable. We accordingly read in one of his biographies that the 'ladies and great and noble men' of Queen Elizabeth's Court 'would not scruple to blow a pipe sometimes very sociably.' At Sir Walter's house in Islington, he frequently entertained his guests with a 'mug of

ale with grated nutmeg and a pipe,' and I have no doubt that when in less prosperous times he was confined in the Tower of London, he had recourse to the grateful weed, though he may have been robbed of his beer. Elizabeth's successor, James I., 'was a Goth,' or, what to us smokers is the same thing, an anti-tobaccoist. He was disgusted with the 'precious sinke' of the pipe and cigar, and did his 'level best' to put down the habit of smoking amongst his long-suffering subjects.

"In 1604 (let this be a warning to colonial governors), in a most unconstitutional manner, without the consent of Parliament, he issued a warrant raising the tax on tobacco from 2d. to 6s. 6d. for every pound value.

"But if the memory of James I. is anathematized by all smokers, his action was absolutely mild when compared with that of Pope Urban VIII., and that of the King of Persia and Czar of Moscow. The Pope threatened excommunication to all using tobacco in churches—certainly an unseemly and intolerable practice, but the King and Czar forbade its use under pain of death, with the pleasant alternative of having the nose cut off for enjoying it in the form of snuff.

"But these potentates could not stem the tide. James soon found this out, and, with an eye to the main chance, cannily changed his tactics. He saw there was 'a tide in the affairs of man, which, taken at the flood, leads on to fortune,' so he took to himself the pre-emption of all tobacco imported. He also decreed, with a view of putting money in his purse, that only those holding his letters patent should be allowed to import.

"It is perhaps not generally known that Charles the Martyr began his reign in 1625, to all intents and purposes, as a tobacco merchant and monopolist. The fact remains, however, that all tobacco not grown in Virginia and Bermuda was seized for his benefit, and that 50,000 pounds of Spanish tobacco were bought by himself and resold to his subjects.

"Camden, in his 'Annals,' asserts that in the reign of the first Charles tobacco was highly prized, 'both as a recreation and a health restorative.'

"We smokers are much indebted to Lord Baltimore for the filip he gave to tobacco cultivation. In 1633 he emigrated to Maryland with 200 persons, who were specially encouraged to cultivate the industry which has been maintained there ever since. Great quantities were grown in England in the middle of the seventeenth century, but of course the psalm-singing Rump Parliament prohibited its growth. The smokers, however, were too strong for Cromwell, and also for Charles II., who was too vicious to permit his loyal subjects to indulge in the little vice of smoking, if it is one.

"In 1650, by 12 Carl. II., chap. 34, Charles, simply to increase his own pocket money and to furnish means for his expensive habits, issued a legal prohibition against the cultivation of tobacco. Smokers were not to be daunted, however. He could not put their pipes out, for the Yorkshiresmen pursued the industry with characteristic stubbornness, and notwithstanding persecution and prosecu-

tion, tobacco and smokers gallantly held their own.

"In 1782 a descent was made on the York cultivators. All their stock of tobacco was seized and publicly burnt, and the dealers were mulcted in penalties to the amount of £30,000. Even so late as 1831 were tobacco cultivators harrassed, William IV., of whom better things might have been expected, in that year prohibited its growth in Ireland. I think I am right in saying that at the present moment great efforts are being made to restore its cultivation in the United Kingdom. Truly it may be said, in reference to the "noxious weed"—*Tempora mutantur et nos mutamur in illis.*

"Curiously enough, in the reign of George III. the practice of smoking was well-nigh superseded by the practice of snuff-taking.

"With reference to snuff, at that period, Wesley, in his 'Poems on Several Occasions,' observes:—

'To such a height with these is fashion grown
They feed their very nostrils with a spoon.'

MODERN ROSE CULTURE.—It seems that the first impulse given to Rose culture in France was at the commencement of the present century, under the auspices of the Empress Josephine. At that time it appears that Rose seeds, obtained from all parts of the world, were sown annually. It also appears that any new varieties raised in this way were not purchasable, but exchanged for other plants to such nurserymen as would undertake to distribute them. At this time it seems that there were eighteen hundred varieties of Roses in France, but not more than two-thirds of that number were considered to be worthy of cultivation. Standard Roses were quite as much in favor then as they have been at any time since. It was not an unusual sight to see them 18 feet high, and sometimes from ten to fifteen sorts were grafted on one Brier.—*Garden.*

INDIAN CEREMONIES WITH THE CAMASS.—At a meeting of the Royal Botanic Society, Dr. Cogswell read a paper upon Camassia esculenta, the Camass of the North American Indians, a Lilaceous plant, whose bulbs were once a staple food of the aborigines of the western slope of the Rocky Mountains. The season of flowering was held as a high festival by the tribes that assembled together to dig up the bulbs; the maiden who had collected the greatest quantity being estimated the most eligible for matrimony.

ARBORIS MULTUM IN PARVO.—The *Chico* (California) *Enterprise* says that "there has been a man around Chico for several days past selling, or endeavoring to sell, cuttings of a peculiar tree. It bears every month in the year, so he says, and has a purple blossom, resembling a pansy. The fruit resembles a lemon in size and shape, but is

pink in color. In taste it has the qualities of both an orange and a watermelon. This wonderful tree comes in different sizes, worth four and six bits each, but we are told that there are few purchasers." We suppose it must be true that such a fellow has been around Chico, but the last part of the last sentence discredits it. "Few purchasers!" Why, here in the East the bigger the fraud the heavier the sales. But it may be that the Chico people read the horticultural journals. There are certainly some subscribers to the GARDENERS' MONTHLY there, and we found the *Pacific Rural Press* in almost every man's house. This probably accounts for the failure of the epidemic to buy the wonderful novelty, which so often prevails.

RUMPH'S WILLOW LAKE NURSERY AT MARSHALLVILLE, GEORGIA.—This fine Southern nursery was only started in 1870, by Samuel H. Rumph, then only in his sixteenth year, when he planted some Peach trees. His first budded trees were sold to the neighbors, with such encouragement, that he set out an acre for budding. He sold every tree, and thus encouraged, he commenced the regular nursery business; the first nursery in Middle Georgia. To-day his orchards and nurseries occupy 360 acres. One of the varieties of peach he has introduced—the Elberta—is a remarkably popular variety. He has 35 acres in strawberries, selling both fruit and plants. He is the first to introduce the raspberry as a market fruit in that section. He has 5 acres in these. The nurseries proper cover 60 acres, all devoted to young fruit trees. The taste for fruit culture has developed all around him, under his successful inauguration of the movement. A neighboring farm has 50,000 bearing trees of the Elberta peach. Another neighbor has now an apple orchard, from which 2,000 bushels of apples were gathered last year; and many others are springing up.

THE LATE MR. A. BRACKENRIDGE.—Mr. A. Brackenridge, whose death was noticed in the November issue, is succeeded in his business by his widow, Mrs. Beatrice A. Brackenridge, and Mr. Wm. McRoberts, an intimate personal friend of the deceased, and a practical gardener. The style of the new firm is "Brackenridge & Co."

DANIEL B. LONG.—This gentleman, one of the members of the energetic firm of Long Bros., of Buffalo, N. Y., will receive the sympathy of his many friends in the loss of his wife, which happened on the 31st of October.

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

HORTICULTURAL HALL, MISS SCHAFER'S MAGNIFICENT GIFT.—At the regular stated monthly meeting of the Pennsylvania Horticultural Society, on the 16th inst., a notable event in its history took place. It was a red-letter day. On that occasion the property was conveyed to the Society, in trust, on the sole condition that the building should be devoted to the use of the Society.

This gift is the munificence of Miss Elizabeth Schaffer, as a memorial to the memory of her deceased brother, the late President of the Society, Mr. Wm. L. Schaffer. It comes to the Society clear of all incumbrance whatever, Miss Schaffer having paid off the mortgage of \$75,000, discharged a ground rent on 15 feet of the property adjoining the building and purchased the stock held by the present President, Mr. J. E. Mitchell.

When Miss Schaffer became her brother's sole heir, under his will, she expressed a desire that the hall should in some way become the property of the Society, and various propositions were made as to its transfer. Finally, on November 1, 1886, through her nephew, Dr. Charles Schaffer, Miss Schaffer proposed to cancel the above incumbrances, and then convey the property to the Society, to be held by it, in trust, as a perpetual memorial of her brother; provided that, if it ever ceased to be held for the chartered objects of the Society, or if the Society should cease to exist, the property should revert to Miss Schaffer or her heirs.

Resuming business, after the reception of Miss Schaffer's gift, the following officers for the year 1887 were elected: President, Joseph E. Mitchell; Vice-Presidents, Caleb Cope, Isaac C. Price, Geo. W. Earl, Robert Craig; Corresponding Secretary, Thomas Meehan; Recording Secretary, Edwin Lonsdale; Treasurer, W. F. Dreer; Professor of Botany, Charles Schaffer, M. D.; Professor of Horticultural Chemistry, James C. Booth; Professor of Entomology, S. S. Rathvon.

The meeting, which was an unusually full one—in anticipation of this occasion, as well as for election of officers—very promptly, properly and with great thankfulness unanimously accepted the gift in a resolution offered by Mr. Price and by a rising vote:

WHEREAS, Miss Schaffer having tendered to the Pennsylvania Horticultural Society the hall they now occupy, as a testimony of affection to the memory of her brother, William L. Schaffer, our late President, we desire to place on record our high appreciation of her generosity and tender to her our heartfelt thanks for thus placing this time-honored Society on a firm basis by putting it in possession of a building admirably adapted for the purpose of holding our meetings and exhibitions, and, when not needed for our purposes, is well adapted for concerts and meetings, the rental from which will enable the Society to increase its premiums for flowers, fruits, vegetables, etc., and thereby stimulate a very useful class of florists and others to increased excellence in their various callings. It will also enable us to establish a reading-room and to resume the publication of our transactions. It is therefore

Resolved, That we gratefully accept Miss Schaffer's truly munificent gift, to be placed in the hands of trustees designated by her brother, at such times as may be most agreeable and convenient to herself; and we hereby pledge ourselves to carry out her wishes in every particular, and will ever remember the interest she has taken to carry out the wishes of her beloved brother, whose many generous acts will ever be held in grateful remembrance.

This occurrence marks a new era in the history of the Society. May it be so inspiring that the spirit as well as the letter of the conditions of the donation shall be observed. As well in true gratitude and recollection of the generous donors, as to insure the real permanent usefulness of the Society; rising, in emulation of the givers, above mere mercenary considerations, to the feeling that the object of the gift as well as the property is to be handed down to the next following generation as a trust unimpaired by the transmission.

This grateful occasion is closely associated with reminiscences of the old hall burned to the ground on the same site on Feb. 1st, 1881. The munificence of Mr. Schaffer came to the rescue on that occasion as that of his sister does in the present one. He gave the use of the property to the Society free of all rent for exhibition purposes, and for its meetings. In the GARDENERS' MONTHLY for December, 1866, appeared a full page illustration of the first Horticultural Hall, then building, as it was to appear, and the following editorial notice:

"We give as a frontispiece for the present volume of the GARDENERS' MONTHLY, a cut of the new Horticultural Hall. It will be the largest

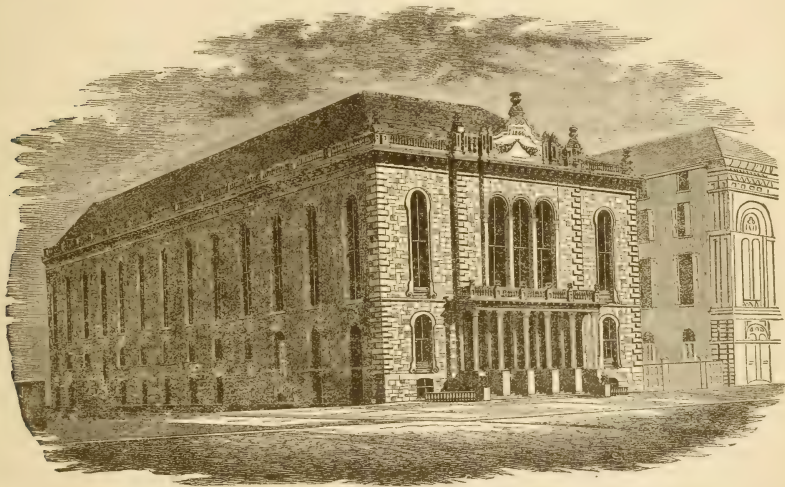
public hall in Philadelphia, and, as representing Horticulture and its influence, will possess an interest to all our readers, especially as the good results of the Pennsylvania Horticultural Society by its lectures and free competition to all the country, members or not, renders the usefulness of the Society more universal than is usual with such local institutions."

In January No., 1867, appeared the following:

"The Hall of the Pennsylvania Horticultural Society, now being built on Broad Street, will be the largest Horticultural Hall in this country – and probably in the world. The entire building is 75 feet front by 200 feet deep, and 60 feet high, being as long as the upper saloon of the Chinese Museum was before it was burnt, and 15 feet wider, with a ground floor longer than that of the lower saloon of the museum building. The hall will, therefore,

most successful held for many years. Particular interest attached to it, on account of its being the first annual one held in the new hall, and the result was looked forward to as a test of the success of the idea. The Society is not blessed with many active, working members, though with a very large list of subscribers and well-wishers. The only wonder is that with so few persons to interest themselves personally, so good an exhibition could be gotten up.

"On the present occasion, the whole success was due, chiefly, to the indefatigable chairman of the Committee of Arrangements, Mr. J. E. Mitchell, Messrs. James Ritchie, Robert Scott, H. B. Blanchard, W. L. Schaffer, Robert Kilvington, who alone acted out of thirty-eight committee-men, Mr. Newberry Smith, a volunteer, a committee of ladies under Miss Percival, and the excellent hard-work-



Old Horticultural Hall. Built 1866-67. Destroyed by Fire February 1st, 1881.

enable the Society to get up their autumnal exhibitions on a scale of splendor fully equal, if not superior, to those held in the Chinese Museum.

"The ladies of the Society will hold a grand 'Bazaar,' for the sale of horticultural, floricultural and fancy articles, on the 23th of May next, in the new hall, at which time the Society will also hold its spring exhibition and competition for roses, strawberries, etc., the whole forming a grand horticultural display and bazaar, the proceeds of which will be devoted to decorating the hall. It has not yet been decided when the formal opening of the hall will take place, but early in the spring of 1867, of which due notice will be given."

In November, 1867, appeared the following:

"*Penna. Horticultural Society*.—The Annual Exhibition was held on the 24th, 25th and 26th of September, and was, in many respects, one of the

ing Secretary, A. W. Harrison. The Philadelphia gardeners and nurserymen behaved well. Some of them had magnificent collections.

"The great effort of the Pennsylvania Society is to be cosmopolitan rather than local,—something as the London *Gardeners' Chronicle*, referring to this Society, recently expressed it—the analogue of the English Royal Horticultural Society—the beginning under the new auspices is a very fair one.

"Our limits will not permit us to give a full report of the many meritorious exhibitors, and articles which swallowed up some six hundred dollars in premiums. We can only give such items as we think may interest our readers in all parts of the world.

"One of the most interesting facts learned was that the new hall keeps things in good order. The fruit and flowers, after three days' exhibition, came out nearly as fresh as they entered."

Then followed a list of the collections, premiums, and those to whom they were awarded (which we do not reprint here, as being too long for space or general interest), and a description of the Exhibition itself.

In March No., 1881, appeared the following :

"Burning of Horticultural Hall, Philadelphia.

—A church adjoining Horticultural Hall, took fire on February 1st, and burnt out some \$170,000. The roof of Horticultural Hall took fire, and the whole upper floor was destroyed. Some \$50,000 of damage was done. The valuable library of the Society was not removed, but escaped injury, except a little from water. Mr. W. L. Schaffer, the President of the Society, who, as our readers know, now owns the hall, has not yet decided to rebuild it immediately.

"The church fire originated after the same old story. The iron of the heater had but one course of bricks between it and the floor joists. It is amazing that bodies of men associated together in churches and such like, to make people better and wiser, do not see that knowledge of earthly things is as important to human beings as things spiritual. We will venture to say that if anyone interested in the management of this church had been a careful reader of a \$2 horticultural magazine, the body would not now be under the necessity of raising \$170,000 to repair damages, nor would the Horticultural Hall have met with its misfortune. Our readers know that it does not require wood to be in contact with fire to burn in time. It may not burn this year or next; but it chars gradually, though the charring work is not seen; and further, it should be known that heat confined is always more dangerous to adjacent woodwork, than when the air has a chance to circulate about it.

"This beautiful hall is an illustration of the old adage, 'Give a dog a bad name, &c.' About the time it was building, a scurrilous sheet was refused some advertising which it demanded. It at once set forth that the building was 'unsafe,' that its 'acoustics were bad,' that it was 'unfortunate.' Respectable papers, not perfectly understanding the real situation, followed in the cry, and the result has been, that while the building was in every respect as great a success as such buildings generally are, it came to be looked on as really having something weak about it, with the natural result of financial misfortune. It is indeed singular how long a fictitious character of this kind can be made to stick. The daily papers of the best class, in their 'Obituaries' of the burnt building, had well-meant notices of its 'failures.' It is no encouragement to its owner to rebuild under these circumstances, and if Philadelphia does not in future have its fine hall for public meetings and so forth, to boast of, it will only be from the ill-advised course of its respectable newspaper press, which has been led unwittingly into a false track."

In February No., 1882, appeared the following :

"Horticultural Hall, Philadelphia.—This beautiful building, destroyed through proximity to

a burning church, a year ago, has been rebuilt by W. L. Schaffer, President of the Pennsylvania Horticultural Society, and was re-opened on the 5th of January. It is 200 feet deep by 75 feet wide. The main hall for exhibitions is 140 feet long, 70 feet wide, and 30 feet high. As a measure of safety to a large audience in case of fire, there are seven doors leading from the building.

"A grand concert was given in order to test its audiphonic powers, and it was pronounced a complete success. Horticultural Hall was, with all its supposed faults, an almost indispensable building to Philadelphians, and one of which they were always proud, and the congratulations to the President of the Horticultural Society, in the re-erection of the beautiful building were on the re-opening numerous and sincere."

In July No. of 1882 :

"With the rebuilding of the hall by the President, the Pennsylvania Horticultural Society is ready to resume its annual exhibitions, for which it has always been so famous. It has just issued its programme for the year. September 19th, 20th, 21st and 22nd is the time set apart for the annual exhibition. The premiums are very good, \$30 and \$25 for the best twenty-five ornamental plants and other flowers. Cut flowers, designs, fruits and vegetables receive due attention. A. W. Harrison, Recording Secretary, Philadelphia, will furnish programmes to all applicants."

And in November, 1882 :

"The Pennsylvania Horticultural Society.—This time-honored institution resumed its annual exhibitions this season, they having been, as our readers know, suspended by the burning of the hall. It was, unfortunately, caught in the formidable equinoctial storm, and hence the attendance of visitors was much below the numbers of former occasions."

"Space will not permit of further notes. We can only say that President Schaffer, Secretary Harrison, Superintendent Andrews and the committee, deserve the thanks of Philadelphians for the very great efforts to re-introduce the wonderful attractions of the olden time. The exhibits were not what they might be if they had the full support of the many amateur ladies and gentlemen who abound about the city, and who, in the old times, did so much—but still there was room for encouragement, and for the hope that the old enthusiastic times would yet come again."

We delayed press as long as was practicable, in the hope of presenting a portrait of the present new building—the Phoenix which arose at the life-giving touch of the late Mr. Schaffer, and now the generous gift of his sister and the present fertile occasion of these notes. But unfortunately the cut was not at hand at last moment of waiting.

THE CHRYSANTHEMUM SHOWS.—The annual exhibits of these beautiful flowers are now held in all the large cities. The grand ones in Boston, New York and Philadelphia, have been particularly attractive, judging by the space given to

notices of the exhibits by these city papers. Usually the Secretaries send us some notes of the special features; but so far this season we have not received any; and we presume, therefore, there has been nothing specially new to chronicle.

In Philadelphia, the chief note of general interest is, the better growth of the plants, and the increased attention and success that seems to follow the training of the plants as single stems; or, as they are termed, standards. There were several collections of these, all showing great skill in the treatment of the plants. These standards were on stems 3 or 4 feet high, with heads 2 or 3 feet through. In one case, the stem was 8 feet long, and full an inch round. In some cases, the heads were trained over almost invisible hemispherical wire frames; in other cases, the form of the head was regulated by light twine. It is a very useful style to grow Chrysanthemums, as the plants can be arranged for decorative purposes, in connection with lower-grown plants very effectively. We have never seen standards before grown to such great perfection.

The first premium in the grower's class for these, was awarded to Mr. Wm. C. Pyle, of Lancaster, Pa. In the amateur's class, the first premium was awarded to Mr. A. Warne, gardener to Clarence H. Clark, Esq.; and the second to James Shaw, gardener to the Friends' Asylum. Benjamin Wood, gardener to James Hunter, Esq., had a special premium for some fine specimens.

In the line of bushy pot plants, it is pleasant to note that advantage seems to have been taken of our friendly criticisms of last year. There were fewer and lighter stakes, less display of wires and twine, more effort to preserve all the leaves, and consequently, less naked stems. The plants altogether had a much more natural look. In former exhibitions, it was not uncommon to see the heroes of old-world shows shake their heads and remark that "they can't do it here like they do in the old country, you know." But there seemed none of this old school about on this occasion. The first premium amateur's collection was awarded to Mr. James Shaw, of the Friends' Asylum. These were in 10-inch pots, and grown as depressed hemispheres. Some were about 6 feet wide, and 2 or 3 feet deep. They were so grown that sticks or strings were scarcely visible.

The other successful exhibitors were Wm. K. Harris, Karl Muller, Wm. Colflesh, Walter W. Coles, W. C. Pyfer, Craig Bros., J. Kift & Sons, Charles Fox, Thos. Foulds, gardener to Wm. M. Singerley, Alex. Ker, gardener to Mrs.

G. Bullock, Fred R. Sykes, gardener to Mrs. H. Ingersoll, Gordon Smith, gardener to the Misses Morris, John Wooding, gardener to Mrs. Roberts. All of these had collections of more or less excellence, in many cases so nearly of equal value, that it is difficult to specify wherein one had special excellencies over the other.

The premium for the best seedling was awarded to Mr. W. K. Harris, who has already done so much to improve the Chrysanthemum. It was named John M. Hughes, after the popular gardener to Mr. Geo. W. Childs. It must, however, be exceedingly difficult to get much new that is very distinct from the old. Hallock Sons and Thorpe, of New York, had cut flowers of 168 varieties on exhibition, and Mr. Walter Coles had 115.

Outside of the Chrysanthemums there were a few other exhibits. C. F. Evans made one of cut roses, that were rarely, if ever, exceeded in size and healthful beauty. Among them was the new white rose, Puritan. It is a very sweet pure white—more of the pure hybrid perpetual, we think, than in the usual classes of popular florists' roses. It keeps its bud down among the foliage, and for those who like to have the bud set off by the rose leaves, it will have attractions over all others.

SUCCESSFUL EXHIBITIONS.—One of the most remarkable incidents of the times is the stupidity of the managers of exhibitions in regard to the underlying principles of success. They are failing everywhere, and each failing exhibition cries aloud for reform. The story of its ruin is clearly told; but the managers belong to that class which have ears and hear not,—eyes, but see not. Like blind-eyed Samson, they hug the pillars of the temple they have so long taken a pride in. They cannot move on, without causing the old fabric to tumble about their ears.

The latest farce is the Edinburgh International Exhibition. The medal is of no value in itself. A medal is quite as good as *The Medal*; so the managers hit upon the ingenious plan of giving no medal actually to anybody,—but only a printed certificate with a picture of a medal, with "Gold medal" printed across it. This suited the exhibitor just as well as the real medal,—for all the exhibitor desires is a chance to say that he had "a gold medal awarded." In this way the Society could afford to be very liberal with premiums,—and they were liberal. Out of 2,200 exhibitors 1,230 had awards of premiums. The exhibitors were elated with this generosity, and made "grand exhibits." People flocked to see it, and it was a "grand success,"—

that is to say, there was a surplus over expenses of \$100,000. But how long will this last? When the public finds out that any body can get "a gold medal awarded," what value, even as advertising dodges, will they have?

We have been through this sort of thing all over our land. Horticultural exhibitions have come to be generally the merest farces, because the people understand that the premiums awarded mean nothing. The best exhibitors stay away because the premiums amount to nothing. To prop up the failing exhibitions, the managers stoop to all sorts of mountebank extras, in order to draw the ignorant masses, and are thus able to boast of "financial success." Newspapers and magazines are tired of noting the proceedings. At one time there was a general interest attached to the successful exhibitor. To know that John Smith got a first premium for roses, meant something. It meant something to the public, as well as a great deal more than something to John Smith. Now the magazine would be thought much below par to waste space to announce that John Smith got first prize, Tom Brown second, and Bill Jones third. It simply means that these were best there, the public well knowing that the leading growers were not represented, and that better "premium" plants could be bought for a few cents at the street corners.

We have long contended that premiums should be given only for excellence, and the point of excellence should be stated in the award. To get the premium, not to excel, is the aim of too many exhibitors.

The chief difficulty is to get judges equal to this work. To give a fair award to a new or rare plant, judges competent to tell a rare plant from a common one must make the award. Still, rules could be formulated for the guidance of judges. Points of excellence could be established. The path could often be made so clear in this way that a judge, though a fool, could not err therein. Then there would be an inducement to the best exhibitors to bring out their novelties—novelties in kind, novelties in culture, novelties in superiority in every sense. People go to exhibitions to be amused and instructed. They get neither of these in commonplace things. But commonplace things should be welcome as exhibits. It is the highest awards that should be discriminative. The best exhibitors appreciate these, and especially would they appreciate any effort of the Society to advertise their excellencies for them. Without some care of this kind, successful Horticultural exhibits will soon be matters of history only.

OHIO HORTICULTURAL SOCIETY, NINETEENTH ANNUAL REPORT.—From George W. Campbell, Delaware, Ohio, Secretary. One of the faults of most reports of this character is the want of an intelligent index, which is here supplied, and we may therefore say it has unusual excellence. The secretary gathers from other sources whatever may be of interest to Ohio, and thus the work is really an annual of Horticulture, as well as the mere proceedings of a State Society.

ILLINOIS STATE HORTICULTURAL SOCIETY.—The winter meeting will be held at Jacksonville, Illinois, on December 14-16. The city is one of the most beautiful in the west, and is well worth seeing, outside of the regular inducements which the society offers. Besides the discussions which are always participated in by some of the most intelligent men in the west, as an additional inducement, the hotel and railroad rates have been lowered, and a long list of premiums for fruits and vegetables has been announced. A. C. Hammond, is Secretary, and Arthur Bryant, Princeton, Illinois, President.

THE COLUMBUS, OHIO, HORTICULTURAL SOCIETY.—This society has been very active this season. Monthly meetings have been held at the Board of Trade Rooms. Addresses have been given by Professors Lazenby and Townshend, and Messrs. W. J. Green, W. R. Parsons, B. Alwood, W. S. Devol, Mrs. O. W. Aldrick, George W. Campbell, and others. W. S. Devol is Secretary, and J. M. Westwater, President.

SUMMITT COUNTY (OHIO) HORTICULTURAL SOCIETY.—This society united exhibitions and premiums with intellectual improvement, and the autumn meeting held at the residence and grounds of Hon. Frank M. Green, was a great success. The ladies took most of the floral premiums. Mesdames Green, B. Norris, Thomas Rhodes and G. Denning being the chief successful exhibitors. The Mademoiselles, however, successfully contested with them in many respects, and Miss A. E. Fenn and Miss Hoover had some of the awards. In the discussion on fruits, it seemed that most of the growers of apples could find no purchasers, though there is a good demand for them in all the market centres. The trouble evidently is, that fruit marketing is not studied as fruit growing is. In grapes, there is a vineyard of 3,000 acres at Euclid; on the ground, Concord brings 2 cents a pound, Delaware 5, and Pocklington and Niagara 7. Early Victor has not been found as profitable as Worden. The sparrow was reported as a serious pest to the grain and fruit grower in that section. Mrs. Crawford read a paper on the education of children, in connection with the aid we may derive from flowers in the effort, and Mr. L. B. Pierce drew a contrast between the literature of Horticulture and that of Agriculture. He thought the Horticultural magazines were fast becoming mere trade sheets, while the Agricultural papers usually kept their columns measurably free from advertising dodges. A new local variety of potato called the Summitt, was extolled for size and beautiful form.

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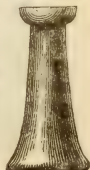


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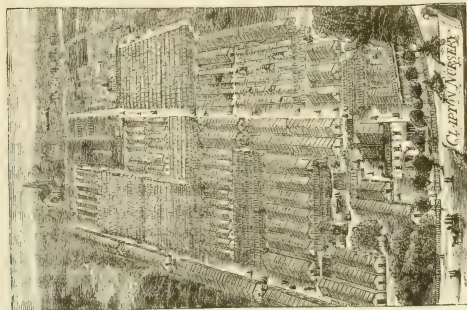
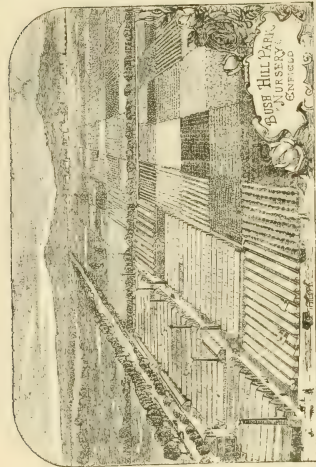
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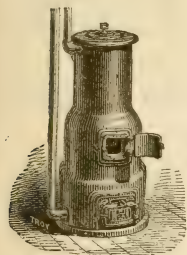
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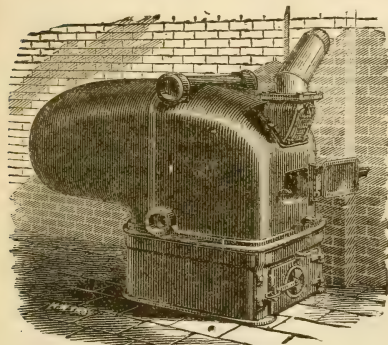
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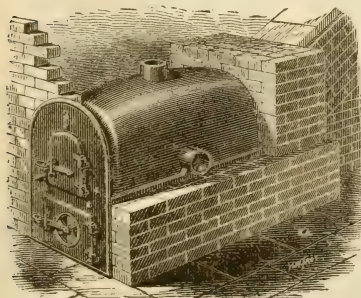
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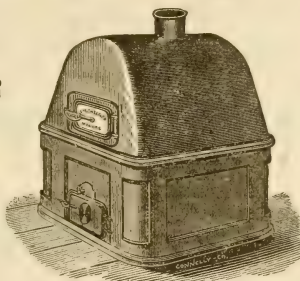
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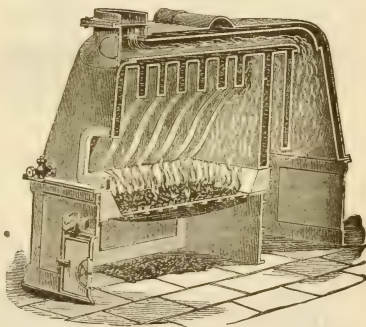
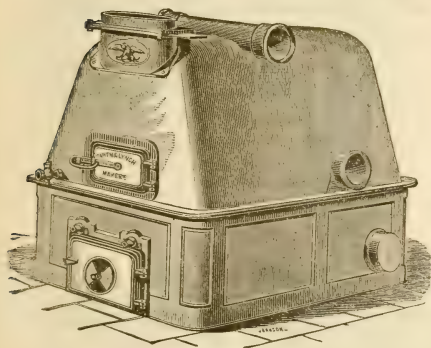
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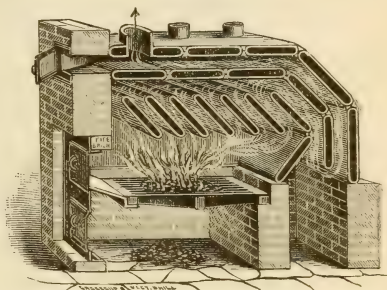
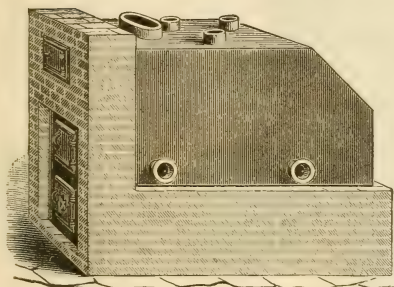
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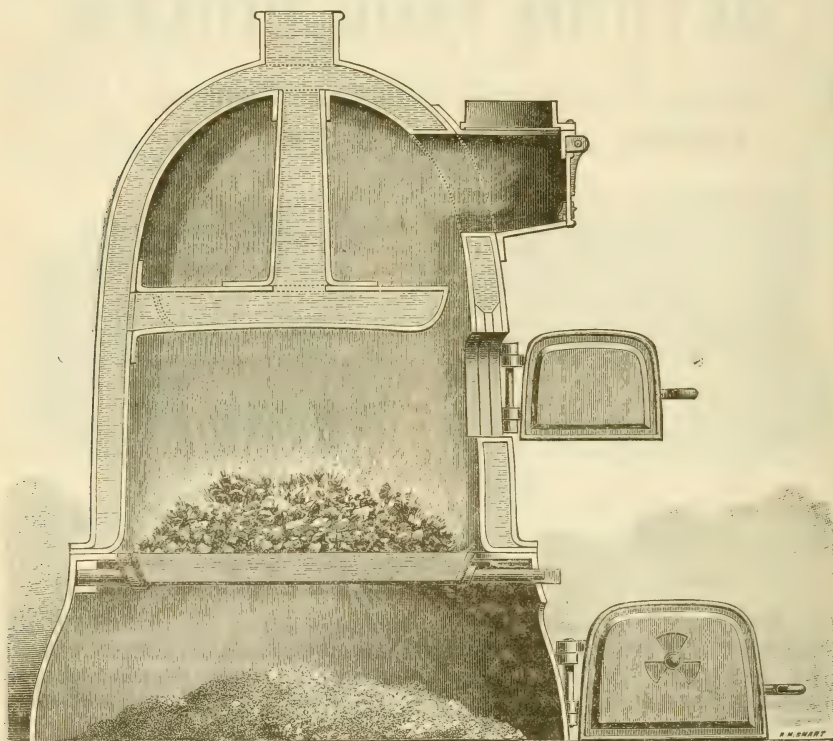
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